CATALOG

Oklahoma Agricultural & Mechanical College

1914
1915

STILLWATER, OKLAHOMA

OKLAHOMA
AGRICULTURAL AND MECHANICAL COLLEGE

TWENTY-THIRD
ANNUAL CATALOG
1913-1914
WITH ANNOUNCEMENTS FOR 1914-1915

STILLWATER, OKLAHOMA

Bulletin of the Oklahoma Agricultural and Mechanical College; Vol. X, No. 88; General Series 23.

Entered March 9, 1903, as second class matter under Act of Congress of July 16, 1894.

CHART OF OKLAHOMA A. & M. COLLEGE WORK

Oklahoma Agricultural and Mechanical College

(The College, after 23 years of development consists of 85 professors and assistants, a student body of 2,436 attending the past year, a group of fourteen brick and stone buildings, a science equipment costing $251,000.00 and 1,000 acres of land. Total value of buildings, grounds and equipment, $889,000.00.)

1. Students in Attendance on Courses of Study in—

(2,436 students 1913-14)

Complete Courses of Instruction

- AGRICULTURE
- ENGINEERING
- DOMESTIC SCIENCE AND ART
- SCIENCE AND LITERATURE
- TEACHERS NORMAL TRAINING
- VETERINARY MEDICINE
- COMMERCE AND MARKETING
- BUSINESS TRAINING
- SHORT COURSES FOR
  - FARMERS
  - ENGINEERS
  - DAIRYMEN
  - COTTON GRADERS
  - TEACHERS

2. The OUTSIDE Work for People of the State by—

(150,000 citizens receive reports and hear lectures.)

Service to Citizens

Agricultural Experiment Station tests and free publications.

Scientific research in behalf of Agriculture, and publishing results.

Lectures at Farmers' Institutes and other meetings.

Lectures at Teachers' Normals and Institutes, and publishing special literature.

Organizing Boys and Girls Clubs at home for the study of Agriculture, Domestic Science and related subjects.

Supplying lecturers and technical literature on Road Building, testing building material, county fair judges, etc.

THE NEW STATE IS OUR PARISH

COLLEGE CALENDAR

1914

September 8, Tuesday—The Fall Term Opens.
October 13, Tuesday—The Short Course in Agriculture and Domestic Economy Opens—Twenty Weeks' Course.
November 26, Thursday—Thanksgiving Day, a Holiday.
December 19, Saturday—The Fall Term Closes.

1915

January 4, Monday—The Winter Term Opens.
January 4, Monday—The Four Weeks' Course in Creamery Buttermaking and Creamery Management Opens.
January 4, Monday—The Two Weeks' Course in Ice Cream Making Opens.
January 4, Monday—The One-Week Course in Milk and Cream Testing Opens.
January 11, Monday—The Winter Short Course for Farmers Opens.
January 11, Monday—The Short Course in Engineering Opens.
January 16, Saturday—The Winter Short Course for Farmers Closes.
January 16, Saturday—The Short Course in Engineering Closes.
March 13, Friday—The Winter Term Closes.
March 13, Friday—The Short Course in Agriculture and Domestic Economy Closes; Graduation Day.
March 16, Tuesday—The Spring Term Opens.
April 22, Thursday—The Annual Field Meet and the Annual Oratorical Contest.
May 1, Saturday—The Seventh Annual Northeastern Oklahoma Interscholastic Track and Field Meet.
May 23, Sunday—Baccalaureate Sermon.
May 25, Tuesday—The Summer School (including the Summer Normal, the Summer Session of the College, and Summer Business Course) Opens.
May 26, Wednesday—Class Day.
May 28, Friday—Commencement Day, the Spring Term Closes.
July 6, Tuesday—Cotton School Opens.
July 30, Friday—Cotton School Closes.
Encampment Schools—July and August.
July 30, Friday—The Summer School Closes.

(The Faculty reserves the right, without further notice, to modify any announcement made in this catalog, if circumstances render such change necessary, and in any event they will be bound by it for only the year following the date of publication.)

BOARD OF REGENTS

The Oklahoma State Board of Agriculture

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Dean of The School of Engineering

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Dean College Extension Division

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Professor of History

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Commandant of Cadets

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Dean of The School of Commerce and Marketing

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College Extension Division

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Director of Physical Training for Men

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C. I. BRAY, M. S.
Associate Professor of Animal Husbandry

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College Extension Division

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Assistant Professor of Chemistry

E. E. BREWER
Foreman of Shops

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Assistant in Agronomy

ADA HAHN
University of Grenoble, France
Instructor in Drawing and Art Work

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Assistant in Bacteriology

P. J. DAVIS, LL. B.
Assistant in Physical Training for Men, and English

RALPH McBURNEY, B. S.
Assistant in Chemistry

D. C. MOORING, M. S.
Assistant in Horticulture and Botany

Z. N. HOLLER, A. B.
Assistant in Mathematics

F. R. BRADLEY
Assistant in Shops

C. W. SKINNER
Assistant in Shops

SUSIE CAGE
Assistant in Domestic Art

J. M. CADWALLADER, B. S.
Assistant in Dairying

CLARK PORTER
Leader of Band, Instructor in Wind Instruments

T. C. RUDE
Conservatory of Leipsig
Instructor in String Instruments

N. W. ROCKEY, A. B.
Assistant in English

INSTRUCTORS

L. B. RITTER, B. S.
Assistant in Bacteriology

V. T. JACKSON, A. B.
Assistant in Chemistry

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Instructor in English

O. L. BRITT, B. S.
Assistant in Electrical Engineering

J. H. CALDWELL
Instructor in Mathematics, Sub-Freshman Department

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Instructor in English

ROBERTA BURGESS
Assistant in Music—Piano

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C. D. LEARN, M. A.
Assistant in Horticulture and Botany

*E. I. LICHTI, B. S.
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W. P. SHULER, M. S., D. V. M.
Assistant in Zoology and Veterinary Medicine

EDITH E. COFFMAN, B. S.
Assistant in Domestic Science

LOYAL F. PAYNE, B. S.
Poultryman

A. F. ROLF, B. A.
Instructor in Poultry Husbandry

JANE PORTER SLOSS
Instructor in Piano

OSCAR MUNCIE
Instructor in Sub-Freshman Department

H. L. THOMSON, B. A.
Assistant in Agronomy

E. E. HALL, B. S.
Assistant in Agronomy

MARY BARLOW, A. B.
Assistant Physical Training for Women, and English

*Resigned.

INSTRUCTORS

A. A. ARNOLD, A. B.
Assistant in Foreign Languages

CAROLYN I. BABB, A. B.
Assistant in Sub-Freshman Department

ISADORE SAMUELS, A. B.
Instructor in English

J. EMERSON NYE, A. B., A. M.
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Assistant in Drawing and Art Work

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Assistant in Department of Business Training

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Assistant in Physical Training for Men and Track Coach

E. E. HARNDEN, B. S.
Graduate Student Assistant in Chemistry

RAY H. PAINTER, B. S.
Graduate Student Assistant in Entomology

H. E. WEAVER, B. S.
Graduate Student Assistant in Dairy Husbandry

L. G. HERRON, B. S.
Graduate Student Assistant in Horticulture and Botany

GEORGE MERRY, B. S.
Graduate Student Assistant in Bacteriology

*Resigned.

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CHARLES K. FRANCIS, A. M., Ph. D.
Chemist Experiment Station

CORA MILTIMORE, B. S.
Librarian

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S. E. ANDREWS, LL. B.
Secretary to the Presidaent and Faculty

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College Physicians

J. L. McKEOWN
Financial Secretary

M. McDONALD
Assistant Commandant of Cadets

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Station Clerk

A. A. JONES, M. S. A.
Assistant Chemist Experiment Station

MRS. HARRIETT EVANS
Matron

ELLA WARDLOW HASKELL, B. A.
Assistant Librarian

G. W. BARNES, B. S.
Instructor in Agriculture for Schools
College Extension Division

WALTER STEMMONS, B. J.
Editor College Publications
College Extension Division

*Resigned.

OFFICERS

T. B. WORTMAN
Supervisor of Boys and Girls Clubs
College Extension Division

H. R. HEDGER, B. S.
Assistant Boys and Girls Club Work
College Extension Division

C. A. POFFENBERGER
Registrar

BETH WARNER MULL, A. B.
Instructor in Domestic Science and Art
College Extension Division

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BOWERS, *Chairman;* HARTSOCK, MARONEY, EWELL, POTTS

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SCHEDULE
CHURCHILL, *Chairman;* BOYD, HARTSOCK

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PITTUCK, *Chairman;* AND HEADS OF DEPARTMENTS

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POTTS, *Chairman;* EWELL, MARONEY

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ASSIGNMENT OF CLASSROOMS
CHANDLER, *Chairman;* MARONEY, BOOTH

DINING HALL SUPPLIES
POTTS, *Chairman;* MARONEY

APPLICATION FOR ENTRANCE

TO

THE OKLAHOMA AGRICULTURAL AND MECHANICAL COLLEGE

I herewith submit this application for the student privileges of the session 1914-15 in the Oklahoma Agricultural and Mechanical College, and do hereby sincerely promise on honor that if this application is granted I will faithfully obey the rules and regulations of the College, will support its constituted authorities in the administration of all its affairs, and I will not enter into or be bound by any agreement or combination with any person or persons for the accomplishment of any purpose at variance with the letter or spirit of the College rules and regulations, or act as a member of any College class, military company, or other organized body for the accomplishment of any such purpose. (A copy of the College rules will be sent on request.)

I do further sincerely promise on honor that I will not join or be a member at any time of any secret society, Greek letter fraternity, or organization of like character composed primarily of students, so long as I am a student of this institution.

Signed ..... Age ..... Years.

Full Name. (Write each name in full. Do not use initials.)

Name of Parent or Guardian .....

Address of Parent or Guardian ..... Oklahoma.

(City or Town) (County)

Street or R. F. D. Number .....

Occupation of Parent or Guardian .....

School or College last attended ..... Did you Graduate? .....

APPLICATION FOR ENTRANCE

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Signed ..... Age ..... Years.
Full Name. (Write each name in full. Do not use initials.)

Name of Parent or Guardian .....

Address of Parent or Guardian ..... Oklahoma.
(City or Town) (County)

Street or R. F. D. Number .....

Occupation of Parent or Guardian .....

School or College last attended ..... Did you Graduate? .....

What Grade did you complete? .....

Church preferred? ..... Are you a member? .....

Indicate by underlining which one of the following complete courses of study you desire to take: *Agriculture; Engineering; Domestic Science and Art; Science and Literature; Teachers Normal Training; Commerce and Marketing; Veterinary Medicine; Business Course; Twenty Weeks' Short Course in Agriculture and Domestic Economy.*

NOTE.—After filling out this blank have the Superintendent, Principal, or Teacher of the last school which you have attended fill out the certificate on the reverse side of this sheet in order that you may be properly classified. Mail at least 10 days before the beginning of the session to A. and M. College, Stillwater, Oklahoma, and you will be notified promptly regarding your application for entrance to the College. Graduates of Common Schools and High Schools applying for entrance at the College should bring diplomas or certificates with them.

(Not to be filled in by applicant.)

Class admitted to ..... Course .....

By Examination. Certificate. Diploma.

Condition on .....

Entrance Credits on .....

(Adviser .....) Approved .....

Chairman of Committee on Entrance.

CERTIFICATE

(To be filled out by Superintendent, Principal or Teacher)

I hereby certify that M ..... attended the

..... School from ..... to .....

and was in good standing at the time of leaving. The following is a correct statement of the work completed in the subjects named.

In order that the applicant may receive the proper credits for work completed and that the College authorities may have a record of the applicant's preparatory training, Superintendents, Principals or Teachers are requested to fill out each blank on this certificate.

SUBJECTS	TEXT BOOK (Full Titles)	No. of Weeks Pursued	No. of Hours Per Week	No. of Pages Completed	Grade
Reading					
Penmanship					
Spelling					
Geography					
Grammar					
Rhetoric					
Composition					
English					
Arithmetic					
Higher Arithmetic					
Algebra (through quadratics)					
Algebra (Complete)					
Geometry (Plane)					
Geometry (Solid)					
United States History					
Ancient History					
Medieval History					
Modern History					
Civil Government					
Physiology					
Physical Geography					
Physics					

.....

Superintendent—Principal—Teacher.

What Grade did you complete? .....

Church preferred? ..... Are you a member? .....

Indicate by underlining which one of the following complete courses of study you desire to take: *Agriculture; Engineering; Domestic Science and Art; Science and Literature; Teachers Normal Training; Commerce and Marketing; Veterinary Medicine; Business Course; Twenty Weeks' Short Course in Agriculture and Domestic Economy.*

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(Not to be filled in by applicant.)

Class admitted to ..... Course .....

By Examination. Certificate. Diploma.

Condition on .....

Entrance Credits on .....

(Adviser .....) Approved .....

Chairman of Committee on Entrance.

OKLAHOMA AGRICULTURAL AND MECHANICAL COLLEGE

The Oklahoma Agricultural and Mechanical College is a State and Federal institution of higher and broader learning, offering technical, scientific education to white persons 14 years of age and over, and carrying valuable scientific information to many thousands who can never visit or attend a college.

The service rendered by the A. and M. College to the State is three-fold:

(1) To educate and train in all that relates to applied science, the industries and citizenship, by affording both liberal and technical studies, laboratories, shops and fields for development of character, the mind and industrial efficiency—the College proper.

The A. and M. College consists of seven schools comprising thirty-one departments. These Schools offer distinct courses of instruction to those applying for graduation. The Schools of Agriculture, Engineering, Domestic Science and Art, Science and Literature, Teachers Normal Training, Commerce and Marketing offer the degree Bachelor of Science (B. S.) to graduates, and Master of Science (M. S.) to those completing a post graduate course. The degree of Doctor of Veterinary Medicine (D. V. M.) is offered to those completing the course in Veterinary Medicine. Provisions have been made to properly classify for entrance graduates from the eighth grade, the tenth grade, consolidated rural schools, the high school and the District Agricultural Schools.

(2) To carry forward investigations in agriculture of a research or experimental nature to learn and disseminate new facts of importance to farmers and the youth of the State—the Agricultural Experiment Station.

(3) To instruct school teachers, children and citizens living in all portions of the State in the best proven practice of scientific agriculture, the industries, the sciences and in the broad fields of domestic economy and home building—the College Extension Service.

The A. and M. College was organized in 1891, and after twenty-three years of sturdy effort now consists of 84 professors and instructors, 2,436 students attending last year, 14 large brick and stone buildings, and an equipment valued at $314,849.00 and 1,000 acres of land.

Tuition is free in all courses and departments. The College is supported by the Federal Government and by the State of Oklahoma as a part of the free school system.

LAWS CONCERNING THE COLLEGE

The A. and M. College owes its origin to a bill offered by U. S. Senator Morrill of Vermont in 1862, which provided funds for one such institution of learning in every State of the Union, and set aside certain public lands from which endowments have come to each of these State and Federal Colleges. Therefore these institutions are known as "The Land Grant Colleges".

This Act of Congress, approved July 2, 1862, gave to each State which accepted its provisions 30,000 acres of Government land for each one of its Representatives in Congress, the proceeds to be applied to the endowment and maintenance of colleges

> "where the leading object shall be, without excluding the other scientific and classic studies, and including military tactics, to teach such branches of learning as are related to agriculture and mechanic arts, ... in order to promote the liberal and practical education of the industrial classes in the various pursuits and professions of life."

Again, in 1887, Congress provided for an Agricultural Experiment Station in connection with each of the Land Grant Colleges:

> "That in order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture and to promote scientific investigation and experiments respecting the principles and application of agricultural science there shall be established under the direction of the College in each State or Territory, established . . . in accordance with an . . . . . 'Act donating public land to the several States and Territories which may provide colleges for the benefit of agriculture and the mechanic arts' . . . . . a department to be known and designated as an 'Agricultural Experiment Station'."

The First Legislature of the Territory of Oklahoma adopted a resolution assenting to and accepting the provisions of Congress and established the Oklahoma Agricultural and Mechanical College in Payne County, at Stillwater, December 25, 1890.

Congress also provided 250,000 acres of public land as a permanent endowment for the College in the Enabling Act granting statehood to Oklahoma.

The Oklahoma Constitution provides that the State Board of Agriculture shall be the Board of Regents of the A. and M. College in the following:

> "Said Board (of Agriculture) shall be maintained as a part of the State Government and shall have jurisdiction over all animal quarantine regulations and shall be the Board of Regents of all State Agricultural and Mechanical Colleges, . ."

The Oklahoma Constitution is the only State Constitution recognizing the fundamental importance of agriculture and domestic science. It declares that—

> "The Legislature shall provide for the teaching of agriculture, horticulture, stock feeding and domestic science in the common schools of the State."

According to the laws of Oklahoma *"The Agricultural and Mechanical College shall be the technical head of the Agricultural, Industrial and allied Science system of education in Oklahoma".*

EDUCATIONAL POLICY

The Board of Regents has carefully considered the wide field of education in which the A. and M. College was designed to perform its work and has approved courses of instruction prepared by the Faculty embracing courses in agriculture, engineering, military science, domestic science, teacher training and the *"related branches, without excluding other scientific and classical studies",* as expressed in the Morrill Act. All the courses offered, which are fully described in this announcement, are therefore essentially scientific, practical, industrial and professional, while at the same time providing a "liberal" education. These courses are of true college grade, and each includes instruction in mathematics, English language, history, physics, political economy, etc. The degree awarded on completion of any of the four-year courses is *Bachelor of Science,* except the degree of *Doctor of*

Veterinary Medicine is awarded to graduates of the course in Veterinary Medicine. The degree, Master of Science, is awarded on completion of one year's work in residence to candidates accepted by the Faculty.

The A. and M. College carries on many lines of educational work not commonly known as "school work", though truly educative in all respects. It is the earnest desire of the management to assist in the educational work in behalf of grown people who may lack spare time to attend college. This is sought to be accomplished by sending out pointed and practical literature, by supplying well informed lecturers to popular gatherings and to meetings of farmers and teachers' institutes or other conventions, *under conditions favorable to profitable presentation and discussion* of the subjects. The Acts of Congress and the State Legislature make certain forms of this "college extension" work obligatory. Helpful facts bearing on manufacturing, engineering, agriculture and education are disseminated to the citizens of all counties in a systematic manner by lectures and in printed reports.

SECONDARY SCHOOLS OF AGRICULTURE

The A. and M. College sustains pleasant relations to the six "Secondary Schools of Agriculture" provided for by the State Legislature. Graduates from these schools are admitted to "advanced standing" in the A. and M. College.

These schools are in active operation in the five Supreme Court Judicial Districts of the State and the Panhandle counties. Each has its President and Faculty of instructors, with earnest classes composed of boys and girls who desire an education with industrial training. The schools are located as follows:

The Connors State School of Agriculture, Warner, Muskogee County, for the First Supreme Court Judicial District.

The Murray State School of Agriculture, Tishomingo, Johnston County, for the Second Supreme Court Judicial District.

The Haskell State School of Agriculture, Broken Arrow, Tulsa County, for the Third Supreme Court Judicial District.

The Cameron State School of Agriculture, Lawton, Comanche County, for the Fourth Supreme Court Judicial District.

The Connell State School of Agriculture, Helena, Alfalfa County, for the Fifth Supreme Court Judicial District.

The Panhandle Agricultural Institute, Goodwell, Texas County, for the Panhandle Agricultural District.

FINANCIAL POLICY

The Agricultural and Mechanical College derives support from both Federal and State Governments:

1. A fund derived from the United States Government that may be used for certain forms of class instruction in the College, known as the "Morrill Fund". This fund can be expended only for instruction of students in literature, languages, the sciences, and by a recent amendment, to prepare school teachers in the principles of agriculture and domestic science.

2. The United States Government funds for investigation of scientific and agricultural matters of importance to farmers, and for publishing the results of such tests and experiments, known as the Hatch and Adams Funds. These support the Oklahoma Agricultural Experiment Station.

3. A fund derived from the rentals of public lands donated by Congress to the Oklahoma A. and M. College under the Enabling Act granting statehood to Oklahoma, known as the "Land Lease Fund". This fund may be used for operating expenses of the College proper.

4. A fund appropriated annually or biennially by the State for buildings, repairs and extensions to the permanent equipment of the A. and M. College.

The fact that all the actual expenses of the A. and M. College are paid by the State and Federal Governments enables the young men and women of Oklahoma to secure an education in any one of the several schools of the College without expense, except for board, clothing, books and personal expenses. The A. and M. College thus becomes a part of *the great free school system* of the State.

GRADUATES OF THE COLLEGE

The life of the entire student body of the A. and M. College is marked by practical purpose and earnest work rarely found in any institution. Scores of graduates of the A. and M. College (and many more who have pursued studies here without graduating) have gone out from the institution and now reflect credit on the system of education maintained here. These measure up to the highest standard of educated citizenship set by the oldest and largest colleges and universities of America. As scientists, as master workmen, as farmers, and agricultural experts, dairymen, electrical, mechanical, architectural and civil engineers, school teachers, chemists, bacteriologists, college professors, Government scientists, business men, accountants, teachers of domestic science and art, as fathers, mothers and citizens, these have added to the progress of the State and Nation and have justified the hopes of their families and friends.

SCOPE

The chart shown in the first part of this catalog will clearly indicate the present organization, purpose and field of work of this institution as the head of the New State system of "applied science education" in Oklahoma.

The many subjects taught are graded and grouped into the following schools: Agriculture, Engineering, Domestic Science and Art, Teachers Normal Training, Science and Literature, Veterinary Medicine, Commerce and Marketing.

INSTRUCTION FOR TEACHERS

The A. and M. College has entered freely into the work of preparing teachers for the profession, as teachers of science, the industrial subjects, and related common branches.

The First State Legislature created the Chair of Agriculture for Schools in the A. and M. College:

> "whose duty it shall be to direct and advise in all matters relating to the teaching of agriculture and allied subjects in the common schools, ... He shall visit the schools, the teachers' institutes, the summer normal schools and the State Normal Schools, advise with the

teachers and officers concerned, ... and shall distribute such leaflets and other literature as may be helpful to teachers and pupils concerned or engaged in teaching industrial, practical and scientific subjects."

The law also states that:

"the Agricultural and Mechanical College, its President, professors and employes shall lend such assistance in carrying out the objects, aims and purposes of the State Constitution regarding the teaching of agriculture and allied practical subjects as shall not conflict with the immediate duties incumbent on them in said institution."

The then State Superintendent, E. D. Cameron, appeared before the Board of Regents and explained the necessity for the A. and M. College rendering all assistance within its power in training efficient teachers, and urged the introduction of the special course for teachers. The Board authorized the Faculty of the A. and M. College to plan and inaugurate such a course.

SCHOOL OF TEACHERS NORMAL TRAINING.—On the recommendation of the State Superintendent, and in harmony with legislative enactments, there has been established a regular collegiate course of instruction known as The School of Teachers Normal Training, which affords instruction in all common school, graded and high school subjects, and embodying scientific and industrial branches. The present demand in this and nearby States for trained teachers in technical subjects is already very great.

Section 206, School Law of 1913, says:

"After January, 1916, no person shall receive a third grade certificate unless he shall have had either academic training equivalent to one year in an approved high school of this State, or have had *at least ten weeks' professional training* in one of the Oklahoma State Normal Schools, State University *or A. and M. College,* or an institution in this State, or other State, having equivalent teachers' professional course; and no person shall receive a second grade certificate unless he shall have had academic training equivalent to two years in an approved high school of this State, or have had *at least twenty weeks' professional training* in one of the Oklahoma State Normal Schools, State University, *A. and M. College,* or other institution having equivalent teachers' professional courses; and no person shall receive a first grade certificate unless he shall have had either academic training equivalent to three years in an approved high school of this State, or have had *at least thirty-six weeks'* professional training in one of the Oklahoma State Normal Schools, State University, *A. and M. College,* or an institution having equivalent teachers' professional courses."

The Summer Normal: To further supply the demand in Oklahoma for trained teachers, the A. and M. College conducts a complete summer normal institute for teachers. Members of the College Faculty are available as instructors and specialists of note are also employed to assist in making the instruction of greatest value. Attendance upon the summer term assures full

credit for training demanded under Section 206 of the School Law quoted above.

The work of the "Department of Agriculture for Schools" in this institution in behalf of all the teachers and schools of Oklahoma, is carried forward with vigor, assisted by experts and scientists from a number of other Departments of the A. and M. College.

Serious responsibilities have been placed on the A. and M. College by Congress and by the State Legislature in *preparing and training teachers* to instruct our children in *agriculture, the industries* and *home building.*

PURPOSES

The aims of the A. and M. College are not merely to train students for increased production or to double or quadruple the earning capacity of the young people who attend, but a distinct effort is made to inspire and educate them to be useful citizens of the highest type. The training, knowledge and intellectual development thus acquired will prove a lasting power for good to the individual student and to the State in which we live.

The primary purpose of all the work done by this institution is to render the youth of Oklahoma more capable and effective; to increase vitality and to add intellectual, moral and creative power; to clarify the ambitions of immature minds; to enrich the ideals of youth, and to make the lives of all who come in contact with the A. and M. College and its work brighter, purer and better. A kindly personal interest in the welfare of every student is evident in all transactions, recitations and relations between instructors and students.

The style of education afforded here does not stop with increase in skill or the acquirement of the "three R's". It goes further and accomplishes true education, the development of the whole man—the hand, the head, the heart.

By adding "skill" the man's efficiency is increased three-fold; by adding to skill education, his productive power is again multiplied by at least three— a nine-fold gain over the unskilled, un-

educated man! Here lies the problem of higher standards of life and citizenship "for the industrial classes in the various pursuits and professions of life".

The purposes of the institution in student instruction may be stated more specifically as follows:

In Agriculture: To equip young men for expert and scientific work as practical farmers, as scientific authorities and investigators, as teachers, and as valuable contributors to the advancement of scientific agriculture; in its short courses to give the maximum of scientific agricultural training and information in the minimum of time to those who cannot take a collegiate course; and in its Experiment Station work, by research and experimentation, to be a trusted guide and leader to the farmers of the State.

In Engineering: To fit young men for positions of profit, responsibility, and usefulness in the professions of mechanical, electrical, architectural and civil engineering.

In Applied Science: To give such proficiency in one or more of the natural sciences as will enable the graduate to conduct research work on his own account, to accept positions which require expert service, and to become a reliable authority in his chosen science.

In Domestic Science and Art: To prepare young women for the duties of homemaking in all its branches as specialists; to prepare teachers, matrons, etc., for the Government service.

In Teachers Normal Training: To educate and train young men and women to become expert teachers of high professional standing, having first a broad foundation consisting of the common branches and the natural sciences.

In Veterinary Medicine: To prepare young men for efficient service in treating and controlling livestock diseases that are common in Oklahoma, to occupy responsible positions in food and stock inspection work in either State or Federal service, and to be reliably informed regarding their profession.

In Commerce and Marketing: To offer a college course in the principles of social science, political economy, the organization of commerce, the exchange of farm products, transportation problems, industrial bonds, insurance, banking, rural credits, manufacturer's profits, and the conduct of varied industries.

In Business Training: To prepare young men and women for acceptable service as clerks, stenographers, bookkeepers, and for other positions in the business world.

In Citizenship: So to train young men and women as definitely to fit them for service profitable to themselves and valuable to the State; to this end training the eye and the hand as well as the mind and the heart, seeking thus to realize the purpose declared by Congress, of promoting "the liberal and practical education of the industrial classes in the various pursuits and professions of life".

It must not be understood that all of the lines of technical instruction named above can be given to one student. A further reading of the catalog will disclose the several courses and the choices which are open to the student.

LAND AND BUILDINGS

The A. and M. College campus and farm embrace a tract of 1,000 acres.

The present buildings were erected by the State at a cost of over $525,000.00 and they are equipped with the latest and best appliances and scientific apparatus, representing an outlay by the State and Federal Governments of approximately $251,007.00. All buildings are steam heated, electric lighted, and have sewer connections.

ENGINEERING BUILDING.—It is of three stories, covers 160 by 80 feet, and is built of reinforced concrete and brick with stone trimmings. On the ground floor are located the steam and hydraulic laboratories and boilerroom, the electrical laboratory, the civil engineering laboratories for testing cement, masonry and steel, rooms for surveying instruments, storage-batteries, standardizing room, men's locker room, and offices for the Dean. On

the next floor are the engineering library, the physical laboratory and lecture room, four other lecture rooms for the various Departments, and rooms for photometry, physical apparatus, stock and women's lockers, and offices for heads of Departments. On the top floor are the quarters for the Department of Architectural Engineering, consisting of a lecture room, library and reading room, large drafting room, and an office for the professor. There are also on this floor four drafting and lecture rooms for the use of other Departments, rooms for records and offices for instructors.

SHOP BUILDING.—A stone and brick building covering 40 by 200 feet; for a depth of 80 feet it is two stories high, and the balance one story. It was constructed mainly by student labor and of materials from the old Shop, formerly occupying part of the site of the new general Engineering Building. It provides accommodations for the carpenter, machine and blacksmith shops and foundry, and has up-to-date tool rooms, etc., complete.

HEATING PLANT.—This building was completed at a cost of $40,000.00, and is equipped with efficient boilers, dynamos and engines. This equipment furnishes heat and light for all College buildings and power for the shops.

CHAPEL BUILDING.—It covers a ground area of 97 by 150 feet and is constructed of reinforced concrete and brick with stone trimmings. A spacious entrance lobby contains offices and stairways to the balcony, and opens into the auditorium. This has a sloping floor from front to rear. The stage is flanked by the necessary dressingrooms. In addition to the ample front entrance there are two side entrances, with stairways leading from the balcony. The seating capacity of the building is about 2,500.

DOMESTIC SCIENCE HALL AND GIRLS' DORMITORY.—This building cost $62,000.00 and is most complete, modern and convenient, containing music room, gymnasium, dining hall, kitchen, reception hall, parlor, classrooms for domestic science, domestic art, and living rooms for the accommodation of girl students. Rooms are electric lighted, steam heated, and all halls are equipped with lavatories, baths and other aids to the health of the

girls attending the College. Student life in this building is under the supervision of a competent matron.

BOYS' DORMITORY.—This building is equipped with all modern conveniences and has two rooms fitted up for use as a hospital where the boys who become sick may be well cared for. A reading room contributes to recreation and social enjoyment.

CHEMISTRY BUILDING.—A two-story brick structure with basement, the main portion 64 by 42, wing 54 by 32 feet. In this building are located the chemistry laboratory of the Experiment Station; classrooms and laboratories for instruction in agricultural and general chemistry.

LIBRARY HALL.—A brick and stone building, two stories and basement, 76 by 72 and 111 by 65 feet. It is used, in addition to the accommodation of the library and reading rooms, for the Departments of Zoology and Veterinary Medicine, Drawing and Art Work, with lecture rooms, toilet rooms, etc., in the basement.

The A. and M. College has also a well selected library of 15,943 volumes, besides some 30,000 unbound publications. All of the desirable current publications are received.

CENTRAL BUILDING (the original building of the A. and M. College).—A two-story brick and stone building with a basement, 66 by 60 feet. It is now used for instruction in mathematics, English, and contains the printing office.

MORRILL HALL.—Named in honor of Senator Justin S. Morrill, by Act of the Legislative Assembly providing for its construction, cost complete, with heating plant, $75,000.00. It contains quarters for the administration and business offices of the A. and M. College and Agricultural Experiment Station, and suitable offices, lecture rooms and laboratories for the Departments of Animal Husbandry, Horticulture and Botany, and Entomology. The armory and the classrooms for instruction in history, pedagogy and foreign languages are located here. There are fireproof vaults on the first and second floors. The general dimensions of the building are 76 by 166 feet.

DAIRY BUILDING.—A brick structure of two stories, 60 by 30 feet, containing the class instruction rooms of the Department.

An addition 50 by 32 feet to this building has materially increased the efficiency of the instructional, experimental and demonstration work of the Department.

Agronomy Building.—A two-story building, equipped with soil and crop laboratories, classrooms, farm machinery laboratory, etc.

Livestock Judging Pavilion.—A two-story brick structure, affording ample accommodations for the study of the fine livestock owned by the College. This building contains two large classrooms, and in addition an amphitheater with a seating capacity of between 400 and 500, and an arena 50 feet square.

Old Engineering Building.—Now occupied by the Departments of Music and Business Training. A brick and stone structure of two stories and basement.

Barns.—A brick barn 60 by 96 feet, a large frame barn for pure bred dairy cattle, a hog barn, and a sheep barn comprise the principal farm buildings.

Greenhouses.—Two greenhouses are a part of the equipment of the Department of Horticulture and Botany. The one recently completed cost $5,000.00 and is used largely by students in studying plant production.

EQUIPMENT

In chemistry, physics, engineering, mineralogy, botany, zoology, bacteriology, entomology, physiology, dairying, veterinary medicine, agriculture, horticulture, music and physical training, the A. and M. College is equipped with the most modern appliances and apparatus.

REQUIREMENTS FOR ADMISSION

Tuesday, September 8, and Wednesday, September 9, 1914, will be devoted to the examination and classification of new students. All candidates for admission, whether by certificate or examination, should present themselves at the President's office and report to the Committee on Entrance Tuesday morning at nine o'clock.

Former students of the A. and M. College will apply for registration Wednesday morning September 9, to their advisers.

Students intending to apply for admission by examination are urged to satisfy themselves, before coming to the A. and M. College, that they can pass a reasonable examination in the subjects required for entrance to the class in view.

Students entering classes in January at the beginning of the winter term, or at any other time, must be prepared to join established class work.

Applicants for admission to the Short Course in Agriculture and Domestic Economy, opening October 13, should present themselves for registration on that date. No entrance examinations are given to such applicants, but age requirements are strictly observed.

It is the desire of the A. and M. College Faculty that there shall be a close coordination between the courses offered at this institution and the secondary schools of the State; namely, the high schools, District Agricultural Schools and the consolidated schools. And for this reason, the work done by these preparatory schools is given as full recognition as possible when the applicants present diplomas or certificates. The degree of success, however, in the work of the College courses on the part of such applicants, *after admission,* will depend more on the thoroughness of the preparatory work than on any other single factor.

Students are admitted to the A. and M. College in three ways: (*a*) *by diploma,* (*b*) *by certificate,* (*c*) *by examination.* Candidates for admission on diploma must not fail to bring such diploma with them for consideration by the Committee on Entrance on applying for registration. Candidates for admission by certificate should present to the Secretary of the A. and M. College or the Committee on Entrance a statement from the last school or college attended, showing classification, grades, and the amount of work covered in each subject. Applicants seeking credits in addition to those covered by diploma or certificate may secure same by examination.

AGE REQUIREMENTS

The minimum age limit is 14 years. Applicants for admission to the Sub-Freshman class living in towns having high schools must be 16 years of age. Applicants for entrance to the Business Course must be 18 years of age.

ADMISSION TO THE SUB-FRESHMAN CLASS

The Sub-Freshman class is established to secure, under competent instruction, a higher degree of efficiency in those studies which prepare for the more advanced subjects in the A. and M. College, particularly in English and mathematics. Applicants are admitted to this class without examination on diplomas from common schools—or on completion of the eighth grade in city schools, if 16 years of age. Other applicants must pass a satisfactory examination in reading, spelling, penmanship, geography, United States history, grammar and arithmetic.

ADMISSION TO THE FRESHMAN CLASS OR TO THE ENGINEERING PREPARATORY CLASS

Applicants are admitted to the Freshman class who have completed the tenth grade either in a high school, or in a consolidated school, or the equivalent of the tenth grade work in a district agricultural school, on presentation to the Secretary of the A. and M. College or the Committee on Entrance a written statement from the last school attended, showing scope of work done, classification and grades received. Such a statement, if satisfactory, will admit to the Freshman class of all Schools except that of Engineering. In the School of Engineering applicants will be admitted to the Engineering Preparatory year.

Those who have *not completed the tenth grade,* but wish to enter the Freshman class or the Engineering Preparatory year, must either show satisfactory grades in all subjects required for admission to the class (see above), or take examination in same. They must also pass examinations in higher arithmetic, algebra through quadratic equations, elementary rhetoric and composition, physiology and physical geography.

Applicants who have completed more than two and less than four years of high school work will be given additional credits in those Freshman subjects in which they present satisfactory grades from high schools, consolidated schools or district agricultural schools.

To enter the Freshman class of the School of Engineering, fifteen units of high school work are required. A unit is defined as one full year of high school work in one subject.

ADMISSION TO ADVANCED STANDING

The courses given in this institution are highly technical in character and lead to the degree of Bachelor of Science. For this reason the A. and M. College finds it necessary to make distinctions in granting credit to applicants wishing to enter the Sophomore class, or higher. In other words, several graduates of the same four-year high school, or other secondary schools of equivalent grade, upon applying for advanced standing in different Schools of the College, may be given *full* Sophomore standing, or they may be admitted to the Sophomore class with certain subjects as "back work"; all depending on what School they desire to enter.

For the School of Science and Literature, the School of Teachers Normal Training, the School of Veterinary Medicine, graduates of four-year high schools, consolidated schools and of district agricultural schools will receive full Sophomore standing.

For the School of Agriculture, graduates of four-year high schools, consolidated schools or district agricultural schools are given Sophomore standing, excepting the Freshman subjects of farm machinery (Agronomy 1), stock judging (Animal Husbandry 1*a* and 1*b*), and elementary botany (Botany 1*a*).

For The School of Domestic Science and Art, graduates of four-year high schools, consolidated schools or district agricultural schools are given Sophomore standing, excepting the Freshman subject of sewing (Dom. Art 1*a*, 1*b* and 1*c*).

For the School of Commerce and Marketing, graduates of four-year high schools, consolidated schools or district agricultu-

ral schools are given Sophomore standing, excepting the Freshman subjects of elements of business (Political Economy and Marketing 1), typewriting (winter and spring terms), and shorthand (winter and spring terms).

For the School of Engineering, as already stated, fifteen units of high school work are required for entrance to the Freshman year.

Students entering classes in January at the beginning of the winter term, or at any other time, must be prepared to join established class work.

Post Graduate Work

The degree Master of Science will be granted upon the completion of twenty-eight hours' work carried for one year or fourteen hours' work carried for two years and the presentation of a satisfactory thesis. Graduate students can be registered only upon the approval of the heads of the Departments concerned, the Faculty, and the President of the A. and M. College. Those who desire to register as graduate students are advised to communicate with the President or with the head of the Department in which they desire to work.

To the Business Course

Applicants for admission to the Business Course must have completed eighth grade subjects and be 18 years of age.

COST OF ATTENDANCE

Board and Rooms

Stillwater is a modern city with sewers, walks, paved streets, electric lights, etc. In a recent statewide contest, Stillwater stood second in sightliness and sanitary condition.

Furnished rooms in the Woman's Building or in the Boys' Dormitory (including heat, light, water, etc., two students occupying each room) are provided at $3.00 per month each, payable

in advance. Application for dormitory accommodations must be made in writing. Those occupying rooms in dormitories must furnish towels, bed linen and covers. The two dormitory buildings contain bathrooms and all necessary facilities, are thoroughly sanitary, heated by steam and lighted with electricity.

Board in the A. and M. College Dining Hall is provided at actual cost to those rooming in the College Dormitories. The cost of such board is about $3.25 per week, payable in advance. The total cost of supplies and labor is prorated at the end of every month to students boarding in the Dining Hall.

A copy of the rules governing assignment of rooms and the operation of the A. and M. College Dormitories will be sent on application.

Board with room in private families can be obtained for $3.25 to $4.50 per week. Furnished rooms, $2.00 to $5.00 per month, if two occupy the room.

Other Expenses

The total cost of attending the A. and M. College courses embraces the items of board, books, clothing and minor incidental expenses of a personal character. These may be safely estimated at $160.00 to $200.00 for nine months. About 50 percent of the students materially reduce their expenses below the figures given by working in the several departments of the A. and M. College and in the City of Stillwater, and many earn all personal expenses by diligent application.

Amount Required to Begin

Tuition is free. Textbooks will cost from $3.00 to $8.00 per term.

Those students of limited means desiring to enter the A. and M. College should have some $75.00 available with which to bear the first items of personal expense and make sure of some months' consecutive study. This amount is estimated for young men to include:

Board and room two months	$36.00
Books, etc	8.00
Incidentals	5.00
Military uniform, hat, shirt, coat and trousers	17.15
Personal expenses	$66.15

With such sum in hand or available the industrious student may by his own efforts secure three or four months, or even a longer period, of study in the A. and M. College. The same estimate will apply to young women if cost of uniform be deducted. Extravagance in all forms is discouraged. Every dollar earned by the student's personal effort results in saving two dollars in unnecessary expenditure. Freshmen and Sub-Freshmen boys must supply themselves with gymnasium suits costing $3.00. Girls of the Sub-Freshman, Freshman and Sophomore classes must supply themselves with gymnasium suits costing $6.00.

Approved Rooming Houses

Comfortable and desirable homes in Stillwater are listed as "approved rooming houses" for male and female non-resident students by the Faculty Committee on Assignment to Rooms. Students are not permitted to room in other than approved rooming houses.

ADVISERS TO STUDENTS

To bring about a closer relation between students and members of the Faculty and parents, and for the purpose of safeguarding every interest of the individual student, the A. and M. College has adopted an "advisory system" which applies to all students. A small number of students are assigned to each instructor, who is known as their adviser for the year, and whose duty it is to know each of them personally, and to meet them from time to time. Only instructors serve as advisers. The adviser endeavors to become familiar with the conditions surrounding his students. In many instances he selects studies suited to the student's need or adjusts the student to his work and sur-

roundings. He calls in case of illness and will notify the parents of his visits at such times and of the general welfare and progress of his advisees. Parents should not hesitate to write to advisers or to the President concerning matters that may have to do with the students' comfort and progress in their studies.

Care of Health

The health of all students is a matter of chief concern to the officers of the A. and M. College. The rules require that all cases of illness be reported promptly. Two responsible physicians are employed who attend all students without charge in cases of illness or injury received in the line of duty, except cases of major surgery. Sickrooms for the better accommodation of boys and girls suffering from any normal illness are provided without additional cost in both of the new dormitory buildings.

All students have access to the separate gymnasiums for boys and girls. Games and sports are encouraged for their mental relief and the physical relaxation afforded. Moral principles are carefully inculcated in these physical sports taken under the daily supervision of instructors who are specialists in physical training. These exercises, taken indoors and in the open air, followed by baths, and with the privilege of consultation on matters of personal health afford valuable safeguards to the health of every student who attends the A. and M. College. Students learn quickly to regulate their habits and to guard themselves against disorders and ill health.

Help

Students are employed freely on the farm, in the creamery, the orchard and garden, A. and M. College Dining Hall, the Printing Department and elsewhere, for which reasonable remuneration is allowed. This, in connection with other positions about the A. and M. College buildings and grounds, and such opportunities as are offered in the city, has enabled a very considerable number of students practically to make their own way through their College course. The amount a student can earn depends almost entirely upon his thrift and energy, and the time he can spare from his studies. The rate of pay is 12½ cents per

hour for work faithfully performed. Many students are thus assisted and encouraged every year—the preference being given to those whose college work is meritorious. It must not be gathered from this that the A. and M. College engages to afford employment sufficient to enable every worthy young man to complete the course without other resources. With the growth of the institution has come an increased demand for this employment which it is impossible to meet in full. Yet very few students have been compelled to leave College in recent years on account of inability to secure work.

Education at Home

Our people show a quick appreciation of their State institutions. All counties in Oklahoma were represented at A. and M. College the past year (with one exception), and more than 2,436 people studied at this institution in 1913-14. This is strong evidence of appreciation of this institution by Oklahomans. There are many reasons why the young people of the State should seek their collegiate training within its borders. The expenses, as set forth in preceding paragraphs, are very low—but a fraction of the necessary cost of attending foreign institutions. The nearness to home in case of accident or sickness is to be borne in mind. The institution is supplied with the latest and most approved equipment in all lines of scientific work. Its instructors are specialists of recognized standing in their respective departments, drawn from the leading technical schools of the country. Its work is fully accredited elsewhere, whether for graduate work, or for employment in technical, industrial, educational or Government service. There is no longer, in brief, any necessity of going beyond the limits of the State in order to secure an approved collegiate education. Moreover, if the student expects to live in Oklahoma, the acquaintance formed in his college life, of hundreds of other young men and women throughout the State, will be an invaluable source both of profit and pleasure to him.

GENERAL INFORMATION

The seat of the Oklahoma Agricultural and Mechanical College is Stillwater, in Payne County, a "college town" of five thousand people, most beautifully and healthfully situated at an elevation of 915 feet above sea level. Payne County was one of the five original counties of Oklahoma Territory and is named for David F. Payne, the noted pioneer, who first settled near the present site of the College. Stillwater citizens and students of the A. and M. College enjoy the advantage of electric lights, telephones, free delivery of mail, a city water system, sewerage, and a very complete system of brick walks shaded continuously by trees.

How to Reach A. and M. College

Stillwater is on the Santa Fe Railroad (Arkansas City and Pauls Valley branch). The main connections are at Guthrie, Pawnee and Shawnee as follows, according to time tables in effect March 1, 1914:

From Perry, Enid and the northwest take the Frisco, arriving at Pawnee at 10:25 a. m. Take the Santa Fe at 10:47 a. m. for Stillwater, arriving at 11:45 a. m.

From Tulsa and the northeast take the Frisco, arriving at Pawnee at 5:38 p. m. Leave at 7:20 a. m., arriving at Stillwater at 8:14 a. m. If more convenient, go via Davenport or Cushing. From the east and southeast, arrive at Shawnee to take the 1:00 p. m. Santa Fe, reaching Stillwater at 3:35 p. m. This train passes through Davenport at 2:07 p. m. and through Cushing at 2:45 p. m.

From the south, southwest and west, reach Oklahoma City to take the 3:35 p. m. Santa Fe northbound, which makes direct connections at Guthrie for Stillwater, leaving Guthrie at 5:30 p. m. and reaching Stillwater at 7:30 p. m.

Moral Influences

Eight leading churches are represented in Stillwater and the students are encouraged to attend and participate in their services. As a matter of fact, the Sunday schools and the young

people's societies of the several churches in Stillwater are sustained very largely by the students from the A. and M. College.

A Young Men's Christian Association and a Young Women's Christian Association are actively engaged in the numerous and beneficial lines of work characteristic of these organizations among students. An active Bible study class is supported by the male students. These student organizations are not merely helpful to their membership, but exert a wholesome influence on the moral life of the A. and M. College. Social gatherings and entertainments are made to contribute to the moral welfare of the students of both sexes, and these add to the address and composure of those who seek the helpful influences of this institution.

Grades and Reports

Grades are stated by a system of letters. The term grade is the average of the *daily grade* and the *grades made in tests,* and in making up the final grade for the term, the term grade shall count two-thirds and the final examination grade one-third. Reports showing the grades and standing of students are sent to parents and guardians *at the end of each term.* Attention is particularly directed to these reports; they are the best indication of the work and standing of the student.

For the information of parents and others, it may be stated that the letter system of grading adopted by the A. and M. College compares with the percentage system about as follows: A grade of A is practically equivalent to a percentage of 95-100, inclusive; a grade of B corresponds to 90-94 plus; C to 80-89 plus; D to 70-79 plus; E to 50-69 plus; F below 50. A final grade of D or better is necessary to pass in any study.

Theses

In some departments a thesis is required for graduation, and in other departments it is elective. Students intending to write theses must select the subject not later than the last week of the winter term, the subjects to be approved by the departments having charge of the work.

Diploma

Each candidate for graduation in the four-year courses shall deposit with the Registrar $2.50. Candidates for graduation in the S. A. and D. E. and Business courses shall deposit with the Registrar $1.00 before the student is recommended for graduation.

Library

The A. and M. College library, a rich storehouse of learning, contains the best magazines, current periodicals and standard works of biography, history, romance, poetry, archology, pedagogy, engineering, agriculture, and works of science. Free access to the library is assured all students. Every department of the A. and M. College is largely represented in it, and it contains, besides numerous reference books, the principal home and foreign periodicals. Students are permitted to consult freely, in the reading room, the reference books and periodicals, and to take to their rooms all other books under proper restrictions.

Literary and Other Societies

General literary societies are always active among the students. The Philomathean, the Omega and the Alpha Societies enroll a large percent of the entire student body, and, in addition, a number of clubs and societies have been formed by students specializing in science, engineering, pedagogy, agriculture and domestic science for the purpose of supplementary work and investigation. The Athletic Association has charge of all local College sports, the "Tug-o'-War" and Field Day exercises, and of the interests of the institution in the interscholastic and intercollegiate meets. The Oratorical Association has charge of the representation of the A. and M. College in the preliminary intercollegiate oratorical contests.

Of Interest to Girls

About one-third of the students of the Oklahoma Agricultural and Mechanical College are young women. All courses are open to them.

The course in Domestic Science and Art is of great practical value to young women because it is carefully arranged to give science with practice in the best possible proportion and order. This course affords a very complete education in hygiene, designing, art work, cutting and fitting, plain and fancy sewing, and includes the subjects needed in a liberal education—English, history, mathematics, physical culture and a number of forms of music. The technical work offered in this course is especially thorough.

In order to meet the demand for a more general course, the "Science and Literature" course has been established. This course will be found to be especially adapted to the needs of young women desiring higher education in literature, languages, history, etc., and offer training in music, elocution and domestic science.

A complete "Teachers' Normal Course" of collegiate grade is offered to those who desire professional training for teaching in high schools and colleges. A State life certificate is awarded those graduating in this course.

Athletics, Military Drill and Discipline

The constant purpose of the A. and M. College is to develop "sound minds in sound bodies" and to train the moral faculties. Clean sports and games on the field cultivate the mental and moral sides of the individual as well as the physical side, while affording needed occasion for relaxation and the repair of muscular and nerve tissue. Ball games and track athletics are encouraged by the A. and M. College authorities.

The Gymnasium for Men is under the supervision of the Physical Director. The exercises in the Woman's Gymnasium are directed by competent lady instructors.

The A. and M. College track team won the State championship of Oklahoma at the Oklahoma City meet in the spring of 1909, and the championship of the Southwest at Austin, Texas, the same season. The team won first in Oklahoma athletics in the seasons of 1909, 1910, 1911, and second in 1912 and 1913.

The Northeastern Interscholastic Track and Field Meet is held on the A. and M. College grounds annually, to which the schools of all sections of Oklahoma are especially invited. Twenty schools participated in these events in the spring of 1914.

Baseball and football are provided with suitable grounds, and tennis courts are at the disposal of students.

Military drill is given for its physical and disciplinary effects, as required by the Federal law establishing this and other similar colleges. The good results of this drill are quickly noticed in the improved health and carriage and deportment of those coming under its helpful influence. Young men, especially, need such training to give the erect carriage and strong physique that marks the man of military training. The power to supervise work and command men can only be gained by those who obey and can perform the work when called on.

A commissioned officer of the United States Army is assigned to duty regularly at the A. and M. College as Commandant of Cadets. Instruction in military science is provided for all male students, and infantry drill is given in the field movements and under arms. Arms, accouterments and ammunition have been supplied by the Federal Government. The military discipline is mild but firm, and cultivates habits of punctuality, alertness and the sense of personal responsibility. Its good effect upon the physique and the health of the students is of added benefit to the gymnasium work. A rifle club organized by volunteers is an interesting feature of military training.

A distinct effort is made to develop a progressive college spirit in the characters of all who attend the A. and M. College. The discipline is morally sound and very systematic in its helpful influence on mind and body. As far as practicable the discipline is adapted to the varying needs of different dispositions coming under its influence.

Honor Students

The honor students for the session 1912-13 were as follows:
Senior Class: W. P. Watson, C. B. Brown.

Junior Class: Harry Roeser, R. F. Shiflett.
Sophomore Class: Merritt Olmstead, Nina Boyd.
Freshman Class: C. A. Willis, M. Lucile Heston.
Sub-Freshman Class: Roy Hoke, Charles Kilpatrick.

Prizes

Two prizes of $15.00 and $10.00 were offered by the President for excellence in the Freshman class. The first prize was won by C. A. Willis, and second prize by M. Lucile Heston for the session of 1912-13. Engrossed commissions are awarded the commissioned officers of the corps, and a handsome sword is given to the captain having the best drilled company. The sword was won in May 1912 and 1913 by Captain F. G. Drummond of Company H. Mr. M. J. Otey, a graduate of the A. and M. College, offers a prize of $10.00 to the student deserving the greatest commendation for progress made during his course while in College. Mr. R. L. Williams was awarded this prize at the close of the year 1912-13.

The Young Men's Christian Association

The Young Men's Christian Association keeps in touch with the International Committee by sending student delegates to the annual conferences held at Ruston, Louisiana, and Oklahoma City. Classes in Bible and mission studies are conducted during the entire year by students and members of the Faculty, and many young men are taking part in this work. At the beginning of every school year the New Students' Committee meets every train and assists new students in securing homes. Receptions are given by the association on one or more occasions during the College year for the purpose of promoting acquaintance among the students. The association maintains a well appointed room in the Library Building where the association literature is kept, and all young men are welcome for rest or study. Regular meetings are held every Sunday at 2:30 p. m., and a weekly prayer meeting is held from 7:00 to 7:30 every Wednesday night. These meetings, conducted by students, members of the Faculty, or ministers of the city, have fostered the Christian life of the members, and through them exerted a wholesome influence upon the entire student body.

The Young Women's Christian Association

The Young Women's Christian Association stands for an all-round young woman, developed physically, mentally, morally and spiritually. The strengthening and broadening of Christian life is the great and chief purpose for which the association exists, but as a means of reaching men and women, the social life of the A. and M. College is used and, in fact, centers in the Y. W. C. A. and its co-worker, the Y. M. C. A.

The students carry on the work of the association and have made it one of the best organized bodies for work in the institution. It carries on systematic courses of Bible and missionary study, which are open to every girl in the A. and M. College. On Sunday afternoon of each week a devotional meeting is held, and all girls are welcomed. A Y. W. C. A. rest room has been provided for the accommodation of all girls. It is conveniently located on the first floor of Morrill Hall.

The association is visited several times during the year by its State and district workers. These educated, devoted young women bring a great inspiration into the girls' lives.

One important service of the association is the meeting of the new students at the train and assisting them in finding homes, and arranging their schedules of study. The reception given to the new students by the two associations is an annual event which is eagerly looked forward to by all. Another annual event given by the Young Women's Christian Association is the May Night Carnival.

SCHOOLS OF INSTRUCTION

The Schools of Instruction are grouped and planned to suit the natural needs and desires of the students in attendance at this institution, as indicated by the experience of several years past. Formerly the studies offered by the several departments of the College were grouped into "Divisions". As a result of recent development and change these are now known as "Schools" and their subdivisions are termed "Courses", thus the School of Engineering has its Electrical Engineering course, Mechanical Engineering course, etc.

Under the present organization the studies of the College are grouped into the following Schools:

1. The School of Agriculture.
2. The School of Engineering.
3. The School of Domestic Science and Art.
4. The School of Science and Literature.
5. The School of Teachers Normal Training.
6. The School of Commerce and Marketing.
7. The School of Veterinary Medicine.

THE SCHOOL OF AGRICULTURE

O. O. CHURCHILL, *Dean*

The Courses in Agriculture are:—

The Regular Course.
Short Courses:—

1. Twenty Weeks' Course in Agriculture and Domestic Science and Art.
2. The Winter Short Course for Farmers.
3. Four Weeks' Course in Creamery Buttermaking and Creamery Management.
4. Two Weeks' Course in Ice Cream Making.
5. One Week's Course in Milk and Cream Testing.
6. Cotton Grading Course.

Departments of Instruction in The School of Agriculture are:—

1. Department of Animal Husbandry.
2. Department of Agronomy.
3. Department of Dairy Husbandry.
4. Department of Horticulture and Botany.
5. Department of Short Courses.

The subjects in The School of Agriculture are taught by the following Departments:—

1. The Department of Animal Husbandry.
2. The Department of Agronomy.
3. The Department of Dairy Husbandry.
4. The Department of Horticulture and Botany.
5. The Department of Mechanical Engineering.
6. The Department of Electrical Engineering and Physics.
7. The Department of Zoology and Bacteriology.
8. The Department of Chemistry.
9. The Department of Entomology.
10. The Department of English and Public Speaking.

11. The Department of Mathematics.
12. The Department of Foreign Languages.
13. The Department of Drawing and Art Work.
14. The Department of History.
15. The Department of Pedagogy and Social Science.
16. The Department of Political Economy and Marketing.
17. The Department of Physical Training.

The School of Agriculture embraces the courses in Animal Husbandry, Agronomy, Dairying and Horticulture, and is concerned with two main lines of effort—instruction and investigation. While the work of instruction comes more directly under the College and the work of investigation and experiment under the Experiment Station, and while they are distinctly separate so far as the duties of each are concerned, yet they unite and the outcome is to more than double the strength of the instruction given both the students and the farmers of our State. The work of both is very closely associated and united on the common college ground of instruction to students and farmers. This desirable result is further strengthened by the fact that the heads of the Departments in The School of Agriculture are also members of the Station staff, so that the instruction given in the College has the benefit of the investigations and experiments of the Experiment Station.

For instruction and investigation purposes, the Division is equipped with excellent lecture rooms, several laboratories, and an equipment which in some lines is very complete. Where it is not so strong as we would like it to be, it is becoming possible by the liberality of the Legislature to extend its efficiency very rapidly. The farm consists of about one thousand (1,000) acres of both rolling and bottom land, affording excellent land for the care of all cultivated crops, as well as pasture land, that is in every way satisfactory. High class herds of livestock are also a part of the equipment. A creamery fully equipped and lately enlarged, and being operated very successfully commercially, is another valuable feature of our equipment. Two greenhouses are now a part of the equipment. The farm has good, modern, horse, cattle, sheep and hog barns. A $15,000.00 Stock Judging Pavilion, containing ample amphitheater and classrooms for showing and judg-

ing livestock is under cover. With all these livestock lines and field crop features so liberally provided for The School of Agriculture has an equipment in animal husbandry, agronomy, dairying and horticulture which adds materially to the excellence of the instruction imparted to students, and greatly strengthens the reliability of all experimental work.

Every effort is being made to bring The School of Agriculture into close and useful relations with the agricultural interests of our State. In this connection it is gratifying to refer to the helpful relations existing between The School of Agriculture and the College Extension Division. The several Departments give liberal aid in the way of lending equipment and lecturers for special agricultural trains, special Short Courses and Boys and Girls Clubs. In these ways and through the issuing of bulletins to the press and the sending forth of lecturers the work of The School of Agriculture is broadening into lines that are becoming extremely useful and valuable to the rural interests of Oklahoma.

The Courses in Agriculture

THE REGULAR COURSE.—The regular course, which covers four years, embraces as major studies, Agronomy, Animal Husbandry, Dairy Husbandry and Horticulture. All the students in The School of Agriculture take the same work in the Freshman and Sophomore years. In the Junior year the students are given some latitude, and are permitted to specialize to a slight extent in either of the major studies which have been mentioned. In the Senior year the specialization is complete.

This course has been arranged so as to enable those who complete it to farm successfully as well as to equip them to fill positions relating to the several lines in which they have specialized.

The schedule of the subjects taught in the regular courses, with the hours per week assigned to each, follows:

Outline of Courses in The School of Agriculture Giving Subjects and Hours

The figures and letters following the departmental name signify the serial number of the subject, and indicate the first (a), second (b), or third (c) term's work in the same subject. The name in parenthesis is the specific name of the subject, and the figures in column at the right of the name indicate the number of hours per week the subject is taught; classroom hours without parenthesis, practicum hours in parenthesis. The practicum period is two hours in length, and is equivalent to one hour classroom work in estimating number of hours per week to be taken. Students must take, including electives, at least eighteen hours' work per week and not more than twenty-three hours, without special permission. To graduate, a student must earn credits in sixty term-hours in each year. By "term-hours" is meant one hour of recitation or two hours of practicum per week, carried throughout one term. Military science and drill are required of all male students in the course.

FRESHMAN YEAR

FALL TERM		WINTER TERM		SPRING TERM	
English 1*a*	4	English 1*b*	4	English 1*c*	4
Mathematics 1*a* (Algebra)	5	Agronomy 10 (Geology)	5	Agronomy 1 (Farm Machinery)	4 (2)
Physics 5 (Elementary)	4 (2)	Mathematics 8*a* (Plane Geom.)	4	Mathematics 8*b* (Plane Geom.)	5
History 1*a* (American)	4	History 1*b* (Government)	4	Pub. Speaking 1*c* (Expression)	(2)
Animal Husb. 1*a* (Stock Judging)	(2)	Animal Husb. 1*b* (Stock Judging)	(2)	Botany 1*a* (Elementary)	3 (4)
Drawing 1*a* (Elementary)	(4)	Mech. Eng. 1*a* (Woodwork)	(4)	Physical Training	
Mech. Eng. 3*c* (Blacksmithing)	(2)	Pub. Speaking 1*b* (Expression)	(2)		
Pub. Speaking 1*a* (Expression)	(2)	Physical Training			
Physical Training					

SOPHOMORE YEAR

FALL TERM		WINTER TERM		SPRING TERM	
English 2*a*	4	English 2*b*	4	English 2*c*	4
Chemistry 1*a* (Inorganic)	3 (4)	Chemistry 1*b* (Inorganic)	3 (4)	Chemistry 1*c* (Inorganic)	3 (4)
Botany 1*b* (Elementary)	2 (4)	Animal Husb. 2*a* (Breeds)	3 (4)	Agronomy 4 (Farm Crops)	3 (2)
Agronomy 2 (Soils)	3 (4)	Horticulture 1 (Orchard Fruits)	3 (2)	Animal Husb. 2*b* (Breeds)	2 (2)
Dairying 1 (Elementary)	2 (4)	Zoology 1 (General)	3 (4)	Agronomy 3 (Grain Judging)	1 (2)
				Horticulture 2 (Veg. Gardening)	4

JUNIOR YEAR

FALL TERM		WINTER TERM		SPRING TERM	
Physiology 1 (Advanced)	3 (4)	Botany 3 (Plant Phys.)	2 (4)	Botany 4 (Plant Mycol. and Pathology)	2 (4)
Botany 2 (Plant Physiology)	3 (4)	Animal Husb. 3*a* (Prin. Breeding)	4	Animal Husb. 3*b* (Prac. of Breeding)	3 (2)
Chemistry 2 (Adv. Inorganic)	3 (4)	Chemistry 17 (Applied Org.)	3 (4)	or	
Elective		Agronomy 5 (Soil Physics)	3 (4)	Botany 5 (Systematic)	1 (6)
		or		Entomology 1 (Elementary)	3 (4)
		Dairying 2 (Advanced)	3 (4)	Chemistry 10 (Agricultural)	5
		or		Elective	
		Vet. Medicine 1 (Anatomy)	3 (4)		
		or			
		Horticulture 7 (Plant Breed.)	5		
		Elective			

SENIOR YEAR

Course in Animal Husbandry

FALL TERM	WINTER TERM	SPRING TERM
Bacteriology 1....3 (4) (General)	Vet. Medicine 3.....3 (Materia Medica)	Vet. Medicine 4.....2 (2) (Animal Diseases)
Animal Husb. 4.....5 (Feeds & Feeding)	Animal Husb. 7*a*....4 (2) (Livestock Man.)	Animal Husb. 7*b*.....4 (2) (Livestock Man.)
Vet. Medicine 2.....2 (Animal Parasites)	Agronomy 7.....5 (Farm Manage.)	College and Experiment Station work..3 (4)
Animal Husb. 5.....1 (4) (Adv. Stock Judg.)	Elective	Political Economy & Marketing 7.....4 (Rural Problems)
Elective		Elective

Course in Agronomy

FALL TERM	WINTER TERM	SPRING TERM
Bacteriology 1.....3 (4) (General)	Agronomy 8*a*.....4 (2) (Soil Fertility)	Agronomy 13.....3 (2) (Adv. Crops)
Animal Husb. 4.....5 (Feeds & Feeding)	Bacteriology 2.....2 (4) (Agricultural)	Agronomy 6.....2 (2) (Adv. Crop Breeding)
Agronomy 11.....2 (2) (Farm Motors)	Agronomy 7..... 5 (Farm Man.)	College and Experiment Station work..3 (4)
Entomology 3.....3 (4) (Economic)	Agronomy 12.....2 (4) (Agr. Engr.)	Political Economy & Marketing 7.....4 (Rural Problems)
Elective	Elective	Elective

Course in Dairying

FALL TERM	WINTER TERM	SPRING TERM
Bacteriology 1.....3 (4) (General)	Dairying 4.....2 (6) (Cheesemaking)	Dairying 7.....2 (2) (Dairy Engr.)
Animal Husb. 4.....5 (Feeds & Feeding)	Dairying 5.....4 (2) (Bus. of Dairy.)	Dairying 8.....2 (6) (Sp. Dairy Prod.)
Dairying 3.....2 (6) (Buttermaking)	Dairying 6.....2 (Factory Manage.)	College and Experiment Station work..3 (4)
Elective	Elective	Political Economy & Marketing 7.....4 (Rural Problems)
		Elective

Course in Horticulture

FALL TERM	WINTER TERM	SPRING TERM
Bacteriology 1.....3 (4) (General)	Agronomy 8*a*.....4 (2) (Soil Fertility)	Horticulture 3.....2 (2) (Forestry)
Animal Husb. 4.....5 (Feeds & Feeding)	Horticulture 4.....3 (4) (Nursery Work)	Horticulture 8.....2 (2) (Landscape Gard.)
Horticulture 6.....2 (4) (Pomology)	Elective	College and Experiment Station Work 3 (4)
Elective		Political Economy & Marketing 7.....4 (Rural Problems)
		Elective

JUNIOR AND SENIOR ELECTIVE

FALL TERM	WINTER TERM	SPRING TERM
Major Agri. Sub.....5	Major Agri. Sub....5	Major Agri. Sub.....5
German 1*a*.....4 (Begin. Course)	Bacteriology 2.....2 (4) (Agricultural)	Bacteriology 3.....2 (4) (Technical)
German 2*a*.....5 (Adv. Reading)	Pedagogy 8.....2 (H. S. Adm.)	Social Science 8.....4 (Government)
Botany 6.....3 (4) (Spec. Systematic)	Horticulture 5.....2 (Business Fruit & Veg. Growing)	German 2*c*.....5 (Adv. Reading)
Vet. Medicine 2.....2 (Animal Parasites)	Social Science 6.....4 (American Citizenship)	Entomology 5.....3 (4) (Scientific)
Pedagogy 1.....5 (Psychology)	Zoology 4.....2 (4) (Embryology)	Botany 9.....3 (4) (Gen. Morphology)
Animal Husb. 9.....2 (2) (Breeds of Poultry)	German 2*b*.....5 (Adv. Reading)	Pedagogy 9.....2 (School Supervis.)
Entomology 6.....3 (2) (Horticultural)	Botany 7.....3 (4) (Plant Cytology)	Animal Husb. 12.....2 (2) (Incubation & Brooding)
English 8*a*.....3 (Adv. Comp.)	Entomology 4.....2 (4) (Biological)	Botany 5.....1 (6) (Systematic)
Pub. Speaking 2.....1 (2) (Adv. Expression)	Animal Husb. 10.....2 (2) (Poultry Prod. & Management)	German 1*c*.....4 (Begin. Course)
Political Economy & Marketing 1.....2 (Ele. of Bus.)	Botany 8.....3 (4) (Morphology)	English 8*c*.....3 (Adv. Comp.)
Political Economy & Marketing 8.....2 (Rural Finance)	German 1*b*.....4 (Begin. Course)	Pub. Speaking 4.....1 (2) (Public Address)
Political Economy & Marketing 9.....3 (Rural Organization)	English 8*b*.....3 (Adv. Comp.)	Agronomy 8*b*.....4 (2) (Soil Fertility)
	Pub. Speaking 3.....1 (2) (Debating)	Agronomy 14.....2 (2) (Irrig. Farm.)
		Thesis

Department of Animal Husbandry

C. I. BRAY, *Associate Professor*
A. F. ROLF, *Assistant in Charge of Poultry*
LOYAL PAYNE, *Poultryman*
D. R. FORRESTER, *Assistant*

The Department of Animal Husbandry gives instruction in those subjects which deal with livestock production. The instruction work includes the study of the recognized market types and the more popular improved breeds of livestock. A study is made of the feeds available to the Oklahoma stock farmer, and methods of preparing and feeding these feeds to obtain the most economical results. The breeding and management of various kinds of livestock are made a feature of the course. A large collection of herd books on file in the Department library are available for class use in the tracing of pedigrees and the studying of special breeds, strains and families of livestock. Judging livestock by means of the use of the score card, as well as comparative stock judging, is fully emphasized. The livestock equipment affords an excellent opportunity to study the improved breeds of stock. The pure bred stock represented are as follows: *Cattle*—Shorthorns, Herefords, Aberdeen Angus and Jerseys; *Swine*—Poland Chinas, Berkshires and Duroc Jerseys; *Sheep*—Shropshires, Dorsets and

Delaine Merinos; *Horses*—Percheron and American Trotter. In addition high class work horses and mules are used as work stock on the farm, and these, together with the animals used in Experiment Station work, are available for instruction in livestock judging. Practical instruction is given in the care, handling and feeding of livestock, and the subjects throughout are made as practical as possible.

Equipment for instruction in poultry husbandry is provided. Flocks of the leading varieties of poultry are maintained, modern poultry houses, incubators, brooders, etc., are in use, and a standard poultry plant operated which is available for student instruction.

SUBJECTS

1*a-b*. STOCK JUDGING.—Freshman year, fall and winter terms; two hours practicum per week. Required: Agr., Normal (men), Vet. Med. (1*a*).

A thorough training in score card work is given. A special study of animal form, as an index to excellence in beef, dairy, mutton, wool and pork production, and of efficiency in labor. Careful consideration is given to the standard market classes and grades of livestock.

2*a*. BREEDS OF LIVESTOCK.—Sophomore year, winter term; three hours theory and four hours practicum per week. Required: Agr., Com. & Mark. Prerequisites: An. Husb. 1*a*, 1b.

The leading improved breeds of horses and cattle are studied, as to their origin, development, adaptability and breed characteristics. The practicum work consists of score card and comparative judging of representatives of the various breeds of stock kept on the College farm and those of nearby breeders.

2*b*. BREEDS OF LIVESTOCK.—Sophomore year, spring term; two hours theory and two hours practicum per week. Required: Agr. Prerequisites: An. Husb. 1*a*, 1*b*, 2*a*.

The leading improved breeds of sheep and swine are studied, as to their origin, development, adaptability and breed characteristics. The practicum work consists of score card and comparative judging of representatives of the various breeds of stock kept on the College farm and those of nearby breeders.

3*a*. PRINCIPLES OF BREEDING.—Junior year, winter term; four hours theory per week. Required: Agr. Elective: Normal.

A study of facts and problems especially important to the plant and animal breeder, including the kinds and causes of variation, the transmission of characteristics, controlling of type, laws of correlation and heredity, and prepotency.

3b. PRACTICE OF ANIMAL BREEDING.—Junior year, spring term; three hours theory and two hours practicum per week. Optional (Bot. 5): Agr. Prerequisite: An. Husb. *3a.*

The selection of breeding stock, systems of breeding, including grading, cross-breeding, line breeding and in-and-in-breeding, pedigree and herdbook study with a view to becoming acquainted with methods of registration, and also with the leading strains and families of the different breeds of livestock, methods of keeping livestock breeding records, identification, etc.

4. FEEDS AND FEEDING.—Senior year, fall term; five hours theory per week. Required: An. Husb., Agron., Dairy., Hort., Vet. Med. (Sophomore).

A study of the composition of the animal body, the processes of digestion, assimilation and elimination, and the function of the different nutrients in animal nutrition, together with the composition of feeds, the compounding of rations for different purposes and for different classes of stock, and the feeding and management of farm livestock.

5. ADVANCED LIVESTOCK JUDGING.—Senior year, fall term; one hour theory and four hours practicum per week. Required: An. Husb. Prerequisites: An. Husb. *1a, 1b, 2a, 2b.*

A course for advanced animal husbandry students in comparative judging of the various market types and the improved breeds of livestock.

7a. LIVESTOCK MANAGEMENT.—Senior year, winter term; four hours theory and two hours practicum per week. Required: An. Husb. Prerequisites: An. Husb. *3a, 3b,* 4.

A study of the most practical methods of producing, feeding and managing different classes of horses, beef cattle and swine.

7b. LIVESTOCK MANAGEMENT.—Senior year, spring term; four hours theory and two hours practicum per week. Required: An. Husb. Prerequisites: An. Husb. *3a, 3b,* 4.

A study of the most practical methods of producing, feeding and managing dairy cattle and sheep.

9. BREEDS OF POULTRY.—Junior or Senior year, fall term; two hours theory and two hours practicum per week. Elective: An. Husb., Agron., Dairy., Hort.

The leading breeds of poultry are studied as to their history, adaptability, utility and breed characteristics. The practicum work consists of practice in scoring representatives of the different breeds.

10. POULTRY PRODUCTION AND MANAGEMENT.—Junior or Senior year, winter term; two hours theory and two hours

practicum per week. Elective: An. Husb., Agron., Dairy., Hort.

A careful study of the management and feeding of laying and breeding stock, and the equipment necessary for the operation of a modern farm poultry plant.

12. INCUBATION AND BROODING.—Junior or Senior year, spring term; two hours theory and two hours practicum per week. Elective: An. Husb., Agron., Dairy., Hort.

Problems of artificial incubation; development of the chick embryo; care, management and feeding of the chick; Experiment Station results; practice work in operating incubators and brooders.

THESIS.—Senior year, spring term. Elective: An. Husb.

In the regular course each student during the spring term, Senior year, may prepare a thesis on some subject of research relating to any of the problems of animal husbandry. The subject, with an outline of the project, must have the approval of the head of the Department under whom the student is taking the major study, during the fall term, and the investigation must be actively undertaken during the winter term.

THE FARM

The tract of land owned by the College embraces about a thousand acres. The College farm proper consists of about seven hundred and thirty acres. This acreage embraces a variety of soil, and includes both lowland and upland. The lowlands are adapted to the growing of corn, alfalfa and other crops of a similar nature, while the uplands are suitable for pasturage. Thus the whole makes a very fit equipment for the breeding and feeding of livestock.

The purpose of the farm is to illustrate so far as possible the preparation of the land, the growing of crops, and the management thereof, according to the best agricultural practices as adapted to Oklahoma. It is intended to be helpful to the farmer who inspects it, as well as instructive to the student who sees its daily operations. Special effort is made to bring the students in close touch with the farm work. It has been felt that our agricultural courses should be stronger in this regard, and it is the intention to bring the student in The School of Agriculture in closer touch with farm work than it has been possible to do in the past. In other words, it is sought to make the farm as much a department of instruction for the student as any laboratory, or other equipment of the College wholly devoted to that purpose.

Another important feature of the farm work is the production of pure seed of the leading varieties of farm crops. This pure seed is produced for distribution to the County Demonstration Farms, and the surplus for general distribution among the farmers of the State. In this way the farm serves as a constant source of pure seed.

Department of Agronomy

O. O. CHURCHILL, *Professor*
A. H. WRIGHT, *Assistant*
H. L. THOMSON, *Assistant*
E. E. HALL *Assistant*

The course in Agronomy is designed to acquaint the student with the fundamental principles in the production of farm crops, in the management of the soil, and in rural engineering. It offers practical training in these modern fields of science and fits men for farm management and for educational and research work. It seeks to supply the great demand for broadly educated scientists who understand soils, crops, and rural engineering. The first two years are devoted largely to the usual scientific and classical subjects of a college course, while the last two years are devoted largely to the technical subjects, whose mastery equips the student for his life work.

The instruction work in the Department of Agronomy is conducted in laboratory and lecture rooms in a building devoted exclusively to this Department. One thousand acres of land are available for the study of plants and soils, under normal environment. Of this area about two hundred acres are devoted to Agronomy work where the demonstrations of soil management, crop adaptation, and cultural methods may be observed.

The soil laboratories are equipped with apparatus and supplies for carrying on studies with soil types, physical properties of soil, and soil fertility.

The crop laboratory is well supplied with the necessary material and specimens for a detailed study of the different crops.

All the latest and best types of farm machinery and farm motors are loaned by different machinery firms to the Agronomy Department for use in class instruction.

Sufficient geological specimens are available for the work required in this subject.

SUBJECTS

1. FARM MACHINERY.—Freshman year, spring term; four hours theory and two hours practicum per week. Required: Agr.

   This course embraces a study of physics as related to the construction of farm machinery; of power machinery and power transmission; and of material used in the construction of farm machinery. The ordinary farm machines are studied under the following outline: Tillage machinery, seeding machinery, harvesting machinery, haying machinery, manure spreaders, threshing machinery, corn machinery, feed mills, wagons and pumping machinery. The practicum consists of taking down and reassembling the machines studied in the classroom, and of an investigation of the working parts of each machine.

2. SOILS.—Sophomore year, fall term; three hours theory and four hours practicum per week. Required: Agr., Com. & Mark. Elective: Normal.

   This course treats of soils in their relation to crop growth; the origin and formation of soils as affecting their fertility and durability; soil texture and soil structure as affecting soil moisture and its movements; soil temperature, aeration and the liberation of plant food; the function of humus; nitrification, denitrification and the fixation of nitrogen, as influenced by soil management. Special attention is given alkali soils, soil erosion and soil management.

3. GRAIN JUDGING.—Sophomore year, spring term; one hour theory and two hours practicum per week. Required: Agr., Com. & Mark. (must be taken in conjunction with Agronomy 4).

   This course consists of a study of the staple crops of Oklahoma.

4. FARM CROPS.—Sophomore year, spring term; three hours theory and two hours practicum per week. Required: Agr., Com. & Mark. (must be taken in conjunction with Agronomy 3).

   This course consists of a study of the staple field crops of Oklahoma.

5. SOIL PHYSICS.—Junior year, winter term; three hours theory and four hours practicum per week. Optional (Dairy. 2 or Vet. Med. 1 or Hort. 7): Agr. Prerequisite: Agron. 2.

   This course consists of a field and laboratory study, by the individual student, of special problems relating to the physical characteristics of soils and their relation to crop production. The student may study any local soil problem which exists on his home farm. Assigned readings, a study of previous investigations and written reports constitute the class work. In the laboratory the experiments begun in Agronomy 2 may be continued or special soil problems may be investigated.

6. ADVANCED CROP BREEDING.—Senior year, spring term; two hours theory and two hours practicum per week. Required: Agron.

In this course a study is made of the principles of plant breeding and their application to the improvement of farm crops. Emphasis is given to the methods now in use by the leading plant breeders, their methods of keeping records, and the manipulation of hybridization.

7. FARM MANAGEMENT.—Senior year, winter term; five hours theory per week. Required: An. Husb., Agron.

This course consists of a study of the administration of the farm. Forms of land tenure; the farm unit adapted to the different kinds of farming; the selection of the farm; planning the farm; types of buildings, and cropping system; farm equipment; stocking the farm; labor problems; marketing problems; farm records and farm accounts are the principal topics studied. The object of the course is to study the definite application and correlation of the principles learned in preceding agricultural courses to actual farm practices.

8*a-b*. SOIL FERTILITY.—Junior or Senior year, winter and spring terms; four hours theory and two hours practicum per week. Required (Senior year): Agron. (8*a*), Hort. (8*a*). Elective (Junior or Senior year): An. Husb. (8*b*), Agron. (8*b*), Dairy. (8*b*), Hort. (8*b*).

This course is intended to cover the problems of soil fertility. The Experiment Station has in progress extensive experiments which are planned to solve the many fertility problems of Oklahoma. These, and the leading investigations being made in other parts of the United States, and those of the Rothamsted Station, will be studied. The practicums will consist of pot culture experiments with the typical soil types of the State.

9. ELEMENTARY AGRICULTURE.—Sophomore year, fall term; three hours theory and four hours practicum per week. Required: Normal.

This course is intended to prepare students taking the Normal course for teaching the elementary principles of agriculture. The study covers in a brief way the main divisions of agriculture—horticulture, forestry, animal husbandry, dairying and agronomy.

10. GEOLOGY.—Freshman year, winter term; five hours theory per week. Required: Agr. Elective: Sci. & Lit. (Sophomore), Normal (Sophomore).

This course deals primarily with structural geology. Physiography will be briefly reviewed, and historical and economic geology will be given as much consideration as time will permit. This course will have a direct bearing on soil studies.

11. FARM MOTORS.—Senior year, fall term; two hours theory and two hours practicum per week. Required: Agron.

This course considers the economy of animals as motors; sweep

powers, tread powers, windmills, traction engines, and the principles of operation, styles, parts and uses of each. The major part of the course consists of a study of gas engines. Emphasis is given gas engine troubles and how to overcome them.

12. AGRICULTURAL ENGINEERING.—Senior year, winter term; two hours theory and four hours practicum per week. Required: Agron.

This course is designed to consider in a brief and concise manner the running of levels, tile and surface drainage, laying and leveling tile, the construction and maintenance of country roads, water supply, and the construction of farm buildings. The practicums will consist of making building plans and specifications.

13. ADVANCED FARM CROPS.—Senior year, spring term; three hours theory and two hours practicum per week. Required: Agron.

A course designed to give the student a broader knowledge of the field crops of the United States than that given in the Sophomore year. This course will consist of lectures, assigned readings and research work in field crops.

14. IRRIGATION FARMING.—Junior or Senior year, spring term; two hours theory and two hours practicum per week. Elective: Agron., An. Husb., Hort., Dairy.

This course consists of a study of the duty of water and its application to different crops.

15. COTTON GRADING.—Students satisfactorily completing the short course in cotton grading, given during the summer, will be given five hours of credit, which may be applied as an elective, fall, winter or spring term, Junior or Senior year. This course will be given only during the summer. For description of course see "Short Courses".

THESIS.—Senior year, spring term. Elective: Agron.

The student may prepare a thesis during the spring term, Senior year, on any subject of research included in the Agronomy Department, after first having secured the approval of the head of the Department. The student is advised not to write a thesis unless he is prepared to outline and begin the work at the beginning of the Senior year.

Department of Dairy Husbandry

ROY C. POTTS, *Professor*
J. M. CADWALLADER, *Assistant*

A separate two-story building 60x30, with wing to the rear 50x32 feet, is devoted exclusively to the work of this Department. The laboratories for student instruction are equipped with all modern machinery for studying the latest and most scientific

methods of analyzing and manufacturing dairy products. On the first floor of the new wing in a room 50x32 feet is operated a demonstration creamery buttermaking department, which furnishes an opportunity to students for investigation of practical and scientific problems in buttermaking.

The aim of the instruction given in this Department is to give young men a thorough and practical knowledge of the many phases of dairying and fit them for positions as superintendents or foremen of creameries and ice cream plants, experts in governmental and experimental dairy work, and managers of dairy farms.

The Special Short Courses in Dairying are described on other pages of this catalog.

SUBJECTS

1. ELEMENTARY DAIRYING.—Sophomore year, fall term; two hours theory and four hours practicum per week. Required: Agr. Elective: Normal (Sophomore or Junior).

   A study of dairy farm management and the principles which apply to the production and handling of dairy products in a wholesome and economical manner on the farm, the official testing of dairy cows for milk and butterfat production, and the use of the official score card in studying dairy farm conditions. In the laboratory is given practical work in milk and cream testing, separating milk, ripening cream, churning, and preparing butter and milk for the market.

2. ADVANCED DAIRYING.—Junior year, winter term; three hours theory and four hours practicum per week. Optional (Agron. 5 or Vet. Med. 1 or Hort. 7): Agr.

   Course for Junior students intending to specialize in dairying during the Senior year. This course consists of a series of lectures with supplemental reference and laboratory work. It includes a history of dairying in this and foreign countries; a retrospect of the dairy and creamery systems employed in the United States since 1850; a study of factory equipment, dairy machinery, dairy legislation and literature; also the composition of dairy products. The laboratory work consists of exercises in testing milk and cream, moisture tests of butter, detecting preservatives and adulterants, standardizing of milk and cream, and the analysis of butter and commercial dairy products.

3. BUTTERMAKING.—Senior year, fall term; two hours theory and six hours practicum per week. Required: Dairy.

   A study of the principles and practice of buttermaking, including pasteurizing, starters, cream ripening, churning, salting, working, packing, judging and marketing of butter, also equipment and operation of factories.

4. CHEESEMAKING.—Senior year, winter term; two hours theory and six hours practicum per week. Required: Dairy.

A study of the care and handling of milk for cheese making, the action of pepsin, rennet, and heat on milk; the manufacturing of cottage, neufchatel, cream and cheddar cheeses, with brief description of the making of other kinds, the curing of cheese cheese judging, and the equipment of cheese factories.

5. BUSINESS OF DAIRYING.—Senior year, winter term; four hours theory and two hours practicum per week. Required: Dairy.

A study of the management of dairy farms and factors influencing the economical production of dairy products.

6. FACTORY MANAGEMENT.—Senior year, winter term; two hours theory per week. Required: Dairy.

This course embraces lectures on the operation of creameries cheese factories, ice cream and dairy plants. Special reference is made to the arrangement of machinery with a view to economizing time and labor. Various systems of simplified bookkeeping and accounting are studied, also of marketing butter both locally and in car lots. Plans for buildings and material for construction of the same are also studied in this course, and thorough training in creamery bookkeeping is given.

7. DAIRY ENGINEERING.—Senior year, spring term; two hours theory and two hours practicum per week. Required Dairy.

This course is intended to familiarize the student with all kinds of dairy machinery, as pasteurizers, churns, boilers, engines and refrigerating machinery. Their construction and principles of operation are studied in particular. Where the student has not had previous experience in the operation of traction or stationary engines, practice work is required in the College power plant on Monday to familiarize the student with the principles of firing steam boilers and operation of steam engines.

8. SPECIAL DAIRY PRODUCTS.—Senior year, spring term; two hours theory and six hours practicum per week. Required: Dairy.

This course, as indicated, embraces a study of and practice work in the manufacture and sale of special dairy products. Those in particular which are studied are the butter substitutes, modified milk, market milk, condensed milk, and frozen dairy products The laboratory work supplements the lectures and gives the student a limited amount of experience in the preparation of such of the products as are selected for study. Extra laboratory work may be taken by the student when arranged.

THESIS.—Senior year, spring term. Elective: Dairy.

The student has the option of taking an extra elective or preparing a thesis on some subject of investigation which bears an important relation to dairying. An outline of the thesis must be approved by the head of the Department and work must begin before the opening of the spring term.

Department of Horticulture and Botany

N. O. Booth, *Professor*
D. C. Mooring, *Assistant*
C. D. Learn, *Assistant*

This Department occupies rooms in Morrill Hall with abundant class and laboratory room, and a full equipment for laboratory and photographic work. It is equipped with a complete line of garden seeders; tools for lawn work; spray pumps; a large collection of models of common varieties of apples, peaches, plums, pears, cherries and such fruits; charts showing the diseases of fruits and garden plants; and a herbarium of cultivated plants showing most of the plants cultivated in the United States. In the way of practical operations, this Department is well situated, having at its command the orchards of the Experiment Station and greenhouse facilities. The horticultural grounds include twenty acres with a complete collection of trees and vines. For instruction in forestry, a plantation of 40,000 trees is available, both for observation and for practical work in propagation, pruning and transplanting.

The equipment of the botanical laboratory includes 40 compound microscopes of recent manufacture (5 of Zeiss and 35 of Bausch and Lomb), 4 camera lucides, a horizontal, compound microscope, 36 dissecting microscopes and a number of hand lenses, hand microscopes, 2 rotary and a sliding microtome; several hundred microscopic slide preparations of lower plants; plant anatomy and plant pathology specimens for special study; a full line of glassware, chemicals, reagents, and stains; special apparatus for plant physiology and pathology, including ovens, clinostat, sterilizers, etc. The large herbarium includes authentic collections of algae fungi, lichens, liverworts, mosses, ferns and seed plants, and a complete set of Halsted's American weeds, one set of Kny botanical charts, a collection of woods, seeds and other preserved material for class use. Aside from this, living material is drawn, as much as possible, from the greenhouses and College grounds.

SUBJECTS

HORTICULTURE

1. ORCHARD FRUITS.—Sophomore year, winter term; three hours theory and two hours practicum per week. Required: Agr., Com. & Mark. Elective: Normal.

   A study of the orchard fruits grown in Oklahoma and the best methods of cultivating and marketing them.

2. GARDEN VEGETABLES.—Sophomore year, spring term; four hours theory per week. Required: Agr. Elective: Normal.

   The general and specific characters of vegetables are studied as a basis of the study of the methods of growing and marketing the crop.

3. FORESTRY.—Senior year, spring term; two hours theory and two hours practicum per week. Required: Hort. Elective: Sci. & Lit., Normal.

   A study of the best trees for planting in Oklahoma for the purpose of growing fuel, fence posts and windbreaks, and the best methods of planting and cultivating tree plantations.

4. NURSERY WORK.—Senior year, winter term; three hours theory and four hours practicum per week. Required: Hort.

   A study of the methods of propagating plants and methods of nursery management.

5. BUSINESS OF FRUIT AND VEGETABLE GROWING.—Junior or Senior year, winter term; two hours theory per week. Elective: An. Husb., Agron., Dairy., Hort.

   A study of the market requirements in the line of fruits and vegetables and of the best methods of meeting these requirements. This course is based upon the practice and experience of the most successful fruit growers and truck gardeners.

6. POMOLOGY.—Senior year, fall term; two hours theory and four hours practicum per week. Required: Hort.

   A systematic study of the varieties of orchard fruits. Material for class use is purchased and kept in cold storage until the class is ready to use it.

7. PLANT BREEDING.—Junior year, winter term; five hours theory per week. Optional (Agron. 5 or Dairy. 2 or Vet. Med. 1): Agr.

   The practice of breeding and selection as it applies to horticultural plants is taught with a view of giving the student a knowledge of the best methods of plant improvement.

8. LANDSCAPE GARDENING.—Senior year, spring term; two

hours theory and two hours practicum per week. Required: Hort.

The fundamental principles of landscape gardening are taught and practice given in making plans for home gardens.

BOTANY

1*a*. ELEMENTARY BOTANY.—Freshman year, spring term; three hours theory and four hours practicum per week. Required: Agr., Dom. Sci. & Art, Com. & Mark. Optional: (Math 1*c*): Sci. & Lit., Normal.

A study of plant forms, mainly of the higher plants, together with the more important plant activities. Living material is used as much as possible in order that the student may gain first hand information for himself.

1*b*. ELEMENTARY BOTANY.—Sophomore year, fall term; two hours theory and four hours practicum per week. Required: Agr. Elective: Sci. & Lit., Normal.

A study of cells and cellular structures. A general view of the plant kingdom by the study of one or more types from each of the larger plant groups.

2. PLANT PHYSIOLOGY.—Junior year, fall term; three hours theory and four hours practicum per week. Required: Agr. Elective: Sci. & Lit., Normal. Prerequisites: Bot. 1*a*, 1*b*, Physics 1, Chemistry 1*a*, 1*b*, 1*c*.

Great care is taken to give the students a thorough training in the essentials of vegetable physiology. All the tissues of the plant are studied, including the stem structures of ferns and seed plants. The last part of the term is devoted to laboratory experimental work in plant physiology, followed by recitations and lectures. Here are included all of the chief functions of plants and the conditions affecting them, such as the influence of temperature, moisture, light and gravitation upon growth, movement, food manufacture and respiration.

3. PLANT PHYSIOLOGY.—Junior year, winter term; two hours theory and four hours practicum per week. Required: Agr. Elective: Sci. & Lit., Normal. Prerequisites: Bot. 1*a*, 1*b*, 2, Physics 1, Chemistry 1*a*, 1*b*, 1*c*.

A continuation of Botany 2.

4. PLANT MYCOLOGY AND PATHOLOGY.—Junior year, spring term; two hours theory and four hours practicum per week. Required: Agr. Elective: Sci. & Lit., Normal. Prerequisites: Bot. 1*a*, 1*b*, 2, 3.

The fungus diseases affecting the agricultural, horticultural and forestral plants are studied structurally. In this connection the best methods of controlling the more common diseases are considered.

5. SYSTEMATIC BOTANY.—Junior or Senior year, spring term; one hour theory and six hours practicum per week. Optional (An. Husb. 3*b*): Agr. (Junior). Elective: An, Husb., Agron., Dairy., Hort. Prerequisites: Bot. 1*a*, 1*b*.

A study of the local plant families most important to agriculture, and the identification of species belonging to these families.

6. SPECIAL SYSTEMATIC BOTANY.—Junior or Senior year, fall term; three hours theory and four hours practicum per week. Elective: An. Husb., Agron., Dairy., Hort., Sci. & Lit., Normal. Prerequisites: Bot. 1*a*, 1*b*, 2, 5.

The identification and classification of plants native to Oklahoma. Special emphasis is paid to seed plants and their classification in relation to cultivated plants.

7. PLANT CYTOLOGY. (Cellular Botany).—Junior or Senior year, winter term; three hours theory and four hours practicum per week. Elective: An. Husb., Agron., Dairy., Hort. Prerequisites: Bot. 1*a*, 1*b*, 2, 5, 8, 9.

A study of the plant cell, cell division, and the phenomenon of fertilization. The student is familiarized with the methods of slide preparation from living material.

8. GENERAL MORPHOLOGY OF THE LOWER PLANTS.—Junior or Senior year, winter term; three hours theory and four hours practicum per week. Elective: An. Husb., Agron., Dairy., Hort., Sci. & Lit. (Senior), Normal (Senior). Prerequisites: Bot. 1*a*, 1*b*, 2.

A general study of the seedless plants except the ferns. Representatives of the algae, fungi, liverworts and mosses are studied as an introduction to the evolution of vascular plants (Botany 9). Special emphasis is put on the system of fungi as a foundation for plant pathological investigation.

9. GENERAL MORPHOLOGY OF THE VASCULAR PLANTS.—Junior or Senior year, spring term; three hours theory and four hours practicum per week. Elective: An. Husb., Agron., Dairy., Hort., Sci. & Lit. (Senior), Normal (Senior). Prerequisites: Bot. 1*a*, 1*b*, 2, 8.

A continuation of Botany 8. Emphasis is placed on the evolution of plants as shown by a study of the reproductive organs and stem anatomy. Ferns and seed plants are the plants studied.

COLLEGE AND EXPERIMENT STATION WORK.—Senior year, spring term; three hours theory and four hours practicum per week. Required: An. Husb., Agron., Dairy., Hort.

This is a study of the various methods of conducting the different kinds of experimental work relating to animal husbandry, agronomy, dairying and horticulture. It familiarizes the student with the organization of the experimental work in this country and

enables him to become informed with reference to the actual experimental work that has been conducted in these various departments of agriculture and assists the student to present the topics relating to these in the most effective manner. The students will be brought into closer touch with experimental work which is under way at the Experiment Station, and may be called upon to take charge of lower class work.

Department of Short Courses

A. C. HARTENBOWER, *Principal*

The short course work fills the gap between the extension work and the regular College courses. It offers to men, women, boys and girls practical training along the lines of work offered in the agricultural, mechanical and domestic science and art courses.

The short courses are not intended to be substitutes for the regular courses offered by the College, but are planned to give concise, practical work along the lines noted. Moreover, these courses are for those who cannot bear the expense or spend the time necessary for regular College courses.

Courses are offered as follows: The Short Course in Agriculture and Domestic Economy; the Winter Short Course for Farmers; the Cotton School, and the Dairy Short Courses.

THE SHORT COURSE IN AGRICULTURE AND DOMESTIC ECONOMY

The Short Course in Agriculture and Domestic Economy opens October 13, 1914, and closes March 13, 1915. During the twenty weeks the arrangement provides the most practical instruction in agriculture and domestic economy in the shortest possible time.

This course is arranged to meet the requirements of young men and young women who intend to stay on the farm. To the former it offers practical instruction along agricultural lines in particular, which will increase the profit from the farm and will make rural life more attractive. To the latter it offers practical training in homemaking with particular attention to cooking and sewing and dressmaking.

ENTRANCE

No entrance examinations are required in the Short Course in Agriculture and Domestic Economy. All applicants must be at least 15 years of age. The School is open to students of both sexes. Mature men and women profit greatly from the instruction given. Eighth grade graduates can do good work. Sixth grade pupils, of from 18 to 24 years of age, can obtain valuable training and experience. Students above the eighth grade, who feel that they are unable to take a regular course in agriculture and domestic economy, find in this course an opportunity to further pursue their studies and add to their training. Farmers and their wives will be able to learn much of scientific agriculture and domestic economy.

Outline of Twenty Weeks' Short Course in Agriculture and Domestic Economy, Giving Subjects and Hours

COURSE FOR MEN

Required

FALL TERM		WINTER TERM	
Farm Arithmetic	5	Farm Arithmetic	5

Elective

(The student must select at least twenty hours each term from this list.)

FALL TERM			WINTER TERM		
Farm Machinery	3	(2)	Gas Engines	3	(2)
Carpentry		(4)	Blacksmithing		(4)
Elementary Dairying	2	(2)	Advanced Dairying	2	(2)
Farm Crops	4		Grain Judging	1	(4)
Vegetable Gardening	3	(2)	Fruit Growing	2	(4)
Traction Engines	2	(4)	Veterinary Medicine	3	(2)
Livestock	3	(2)	Livestock	3	(2)
Stock Judging	1	(4)	Stock Judging	1	(4)
Farm Law	3		Farm Management	3	(2)
English Composition	5		English Composition	5	
Insect Enemies	3	(4)	Soils	3	(2)
Music	2		Music	2	
Poultry	2	(2)	Poultry	2	(2)
Public Speaking		(4)	Public Speaking		(4)
			Rural Problems	4	(2)

COURSE FOR WOMEN

(The student must select at least twenty-five hours per term from this list.)

FALL TERM			WINTER TERM		
Cooking	1	(10)	Cooking	1	(10)
Hygiene and Home Nursing	2	(2)	Dressmaking	1	(10)
Drawing		(4)	Home Decorating	2	(4)
Sewing and Dressmaking	1	(10)	Sewing (fancy work)		(6)
Music	2		Drawing		(4)
English Composition	5		Music	2	
Public Speaking		(4)	English Composition	5	
Poultry	2	(2)	Public Speaking		(4)
Vegetable Gardening	3	(2)	Poultry	2	(2)
Elementary Dairying	2	(2)	Fruit Growing	2	(4)
Farm Arithmetic	5		Farm Arithmetic	5	

GRADUATION

1. A certificate of graduation will be granted to all students who satisfactorily complete twenty-five hours of work per week during the fall and winter terms.

2. Students who complete the English and arithmetic offered in this course with a grade of "B" or better and who complete fifteen hours per week for the course with a grade of "C" or better, may enter the Sub-Freshman class without examination.

An illustrated twenty-four-page announcement giving detailed information regarding the courses offered, expenses, social life, etc., will be mailed upon request by the Department of Short Courses, A. and M. College, Stillwater, Oklahoma.

THE WINTER SHORT COURSE FOR FARMERS

A short course of one week is offered Oklahoma farmers each year. The 1915 session of this course will take place January 11 to 16, inclusive. The Winter Short Course for Farmers is intended as a clearinghouse for agricultural ideas. During the past session the attendance of 947 was more than double that of the preceding year. Some of the most noted agricultural authorities in this country have appeared upon the programs of the Winter Short Course for Farm-

ers. Among those who were present for lectures and demonstrations at the 1914 session were:

Professor L. W. Chase, Silo Expert, University of Nebraska.

Professor C. R. Ball, Grain Sorghum Expert, U. S. Department of Agriculture.

Dean J. H. Miller, Kansas State Agricultural College.

Mrs. Mary P. Van Zile, Kansas State Agricultural College.

Professor C. N. Arnett, Iowa State College.

H. M. Bainer, Agricultural Demonstrator, Santa Fe lines.

J. H. Leavitt, proprietor Belle Isle Dairy.

Charles Dillon, Managing Editor, Capper publications.

Charles E. Eckerle, Marketing Expert, American Cooperative Journal.

For the 1915 session specialists from the different sections of the United States, including the most progressive farmers and stockmen of Oklahoma, will be present for lectures and demonstrations. A detailed announcement will be issued later. All requests received before the announcement is printed will be filed, and information sent some weeks before the short course takes place.

DAIRY AND CREAMERY SHORT COURSES

It has been the custom of the Oklahoma A. and M. College for several years past to offer special short courses in dairying. The Dairy Department is well equipped to offer such courses. It has in operation a well equipped creamery and ice cream factory with a capacity of two tons of butter and 200 gallons of ice cream daily, and this equipment is available to all students in these courses. The four instructors in the Department are specialists in their respective lines. In short, the courses offer exceptional opportunities for a study at first hand of the problems confronting the ice cream maker, buttermaker and creamery manager.

There are no entrance examinations. It is preferred that those entering these courses shall be over 18 years of age, and shall have completed a common school course. But other persons interested may obtain useful information and valuable experience by taking these courses.

The instruction offered consists of both lectures and laboratory work. Practical work is at all times given special consideration by the instructors. The equipment of the Department provides modern machinery for both ice cream making and buttermaking.

There are no fees in any of the courses, but accidental or careless breakage of apparatus will be charged to the student.

COURSE IN CREAMERY BUTTERMAKING AND CREAMERY MANAGEMENT

This course is intended for persons who desire a practical knowledge of creamery management and creamery buttermaking. Those specializing in buttermaking will devote much of their time to practical work in pasteurizing, ripening and churning cream, while the time of the creamery managers will be given largely to creamery bookkeeping and auditing creamery accounts. The instruction work in buttermaking will include milk and cream testing, grading of cream, moisture testing of butter, pasteurizing and ripening cream, churning and marketing butter. **A four weeks' course beginning January 4, 1915.**

COURSE IN ICE CREAM MAKING

The course in Ice Cream Making includes actual work in ice cream making. Lectures outlining the points considered in making the different kinds and qualities of ice cream form an important part of the course. Particular emphasis is given to the freezing of plain vanilla ice cream to obtain proper overrun and body. The use of various kinds of fillers and flavors will be studied, and ice cream mixers will be tested for butterfat. General lectures on the making, packing and marketing of ice cream will be given during the course. **A two weeks' course beginning January 4, 1915.**

COURSE IN MILK AND CREAM TESTING

This course is offered in conjunction with the buttermaking and ice cream making courses and for the special benefit of cream buyers at cream stations. Two lectures will be given daily, and methods of sampling, testing and handling milk and cream will be discussed. Four hours are spent each day in the milk testing laboratory under the supervision of experts. Students in this course are given special lectures on the breeding, feeding, care and management of cattle. The use of the silo and silage crops for the economical production of dairy products is also emphasized to short course students. Students passing a satisfactory examination in the Milk and Cream Testing course will be granted a State license by the State Dairy Commissioner. This license is required by law, and a fee of $1.00 is charged when a license is granted. **A one-week course beginning January 4, 1915.**

THE COTTON SCHOOL

The A. and M. College Cotton School is what the name implies. Every phase of cotton growing, cotton grading and cotton marketing is considered in detail. **A four weeks' course beginning July 6, 1914.**

The first important mission of the Cotton School is to bring before those in attendance the most profitable methods of cotton production under the soil and climatic conditions of Oklahoma. The cotton grower must produce the largest possible yield if he secures the maximum profit per acre. The cotton ginners and cotton buyers in Oklahoma should be able to advise the growers in their respective territories with regard to approved methods of cotton culture. They should understand methods of improving the quality and increasing the quantity of the product. Lecture work by experts on cotton growing is given throughout the course. The experimental work with cotton at the Oklahoma Experiment Station and at the Experiment Stations of other States forms a basis for many of these lectures on cotton growing.

The second important mission of The Cotton School is to assist in bringing about a standardization of cotton marketing in Oklahoma. Cotton commerce is not on a permanent basis because many of the cotton growers, buyers and ginners have not had an opportunity to become proficient in cotton grading. This School places before those interested in cotton in this State an opportunity for proficiency in recognizing the market grades of cotton. The effect of grade upon price, the methods of shipping and marketing cotton, as well as the grading itself are discussed by successful, practical cotton buyers. Men who have succeeded in the cotton business are brought to this School for four weeks to impart the information they have secured from years of experience.

The third important mission is to give those in attendance an opportunity to exchange experiences and compare methods. Each subject discussed is supplemented by questions and answers—not only from the lecturers, but also from those in attendance. The aim throughout the course is to make the work as intensely practical as possible.

The College places everything that is appropriate in equipment at the disposal of this School. Cotton grading is an art, and is taught by actual practice. In order to give a maximum proficiency in grading, thousands of samples from cotton counties of Oklahoma and from the principal cotton markets of the United States are placed before those in attendance. Cotton grading is taught from these samples under the direction of experts. In the early part of the School a standard score card, prepared by the College, and embracing the points and cuts considered in cotton grading, is used. When those in attendance have learned to use this score card they should be able to tell offhand the grade and half grade of any cotton sample.

The standard grades and half grades of cotton used in the School are those prepared by the Bureau of Standards, U. S. Department of Commerce. A complete set of these standard grades and half grades is conveniently placed in the judging laboratory for comparison with samples scored and placed.

The lecturers of the Cotton School will consist of the regular Agricultural Faculty of the College and other experts in their respective lines from over Oklahoma. The lecturers and demonstrators on cotton grading have been connected with the School before and understand the work thoroughly.

Tuition in The Cotton School is free. Personal expenses, such as board and room, for the full session of four weeks, exclusive of railroad fare, need not exceed $20.00. The increased profit from a few bales of cotton would pay this expense.

THE SCHOOL OF ENGINEERING

R. E. CHANDLER, *Dean*

The School of Engineering embraces the courses in Mechanical Engineering, Electrical Engineering and Physics, Civil Engineering and Architectural Engineering.

The subjects in The School of Engineering are taught by the following Departments:

1. The Department of Mechanical Engineering.
2. The Department of Electrical Engineering and Physics.
3. The Department of Civil Engineering.
4. The Department of Architectural Engineering.
5. The Department of Chemistry.
6. The Department of English and Public Speaking.
7. The Department of Mathematics.
8. The Department of Foreign Languages.
9. The Department of Drawing and Art Work.
10. The Department of History.
11. The Department of Business Training.
12. The Department of Physical Training.

The Engineering courses are intended to prepare young men for positions of usefulness and responsibility in the mechanical, civil, electrical and architectural engineering professions.

The School of Engineering occupies two buildings: The Engineering Building and the Shop Building. Both of these buildings have been built within the last three years. The Engineering Building was erected in 1912 at a cost of $75,000.00. It is of three stories, covers 160 by 80 feet, and is built of reinforced concrete and brick with stone trimmings. On the ground floor are located the steam and hydraulic laboratories and boiler room, the electrical laboratory, the civil engineering laboratories for testing cement, masonry and steel, rooms for surveying instruments, storage batteries, standardizing room, men's locker room,

and office for the Dean. On the next floor are the engineering library, the physical laboratory and lecture room, four other lecture rooms for the various Departments, and rooms for photometry, physical apparatus, stock and women's lockers, and offices for heads of Departments. On the top floor are the quarters for the Department of Architectural Engineering, consisting of a lecture room, library and reading room, large drafting room, and an office for the professor. There are also on this floor drafting and lecture rooms for the use of other Departments, rooms for records and offices for instructors.

The new Shop Building is of stone and brick, and covers 40 by 200 feet; for a depth of 80 feet it is two stories high and the balance one story. This building was constructed mainly by student labor and of materials from the old Shop, formerly occupying part of the site of the new Engineering Building. It provides accommodations for the carpenter, machine and blacksmith shops and foundry, and has up-to-date tool rooms, etc., complete.

The power plant of the College, with its steam boilers, steam engines, and generators, is also used by The School of Engineering for the purpose of making tests and familiarizing the students with the use of this class of machinery.

The laboratories of the College are equipped with apparatus for commercial testing of machinery and various other engineering investigations. Tests will be carried out for corporations or for individuals. The expense in every case is borne by the persons for whom the work is done. The approximate cost can be learned by addressing The School of Engineering of the College. No charge is made for any information that can be given readily by any of the engineers in each of the several Departments.

A partial list of the tests that can be conveniently undertaken is given in the following:

Heating value of coal and fuel oil.
Proximate analysis of coals.
Tests of electrical apparatus.
Tests of electrical installations.
Tests of road building materials—stone, brick, asphalt.

Tests of pumps for irrigation, city water supply, etc.
Tests of boilers.
Tests of steam and gas engines.
Tests of complete power plants.
Examinations of water supply.

Engineering Short Course

A Short Course of Lectures on Engineering Subjects will be given during the same week as the Winter Short Course for Farmers, January 11 to January 16, 1915.

These lectures may, in some instances, be accompanied by laboratory demonstrations. They will be designed to suit the needs of county surveyors, road supervisors, superintendents of power plants, and others interested in engineering. The subjects for discussion will probably be selected from the following list: Roads, Drainage, Irrigation, Concrete Construction, Gas Engines, Steam Engine Practice, Pumps, Shop Work, Uses of Electricity, Building Construction.

Outline of Courses in The School of Engineering Giving Subjects and Hours

The figures and letters following the departmental name signify the serial number of the subject, and indicate the first (a), second (b), or third (c) term's work in the same subject. The name in parenthesis is the specific name of the subject, and the figures in column at the right of the name indicate the number of hours per week the subject is taught; classroom hours without parenthesis, practicum hours in parenthesis. To graduate, a student must earn credits in all subjects outlined in the course. Military science and drill are required of all students in this course.

ENGINEERING PREPARATORY YEAR

FALL TERM	WINTER TERM	SPRING TERM
English 1*a*.....4	English 1*b*.....4	English 1*c*.....4
Mathematics 2*a*.....4 (Plane Geom.)	Mathematics 2*b*.....5 (Plane Geom.)	Adv. Arithmetic.....5
German 1*a*.....4 (Begin. Course) or	German 1*b*.....4 (Begin. Course) or	German 1*c*.....4 (Begin. Course) or
Spanish 1*a*.....4 (Begin. Course)	Spanish 1*b*.....4 (Begin. Course)	Spanish 1*c*.....4 (Begin. Course)
History 1*a*.....4 (American)	History 2*a*.....5 (English)	History 2*b*.....4 (English)
Bookkeeping or Typewriting ..... (10)	Bookkeeping or Typewriting ..... (10)	Business Practice ..... (10)

FRESHMAN YEAR

FALL TERM	WINTER TERM	SPRING TERM
English 1*a*.....4	English 1*b*.....4	English 1*c*.....4
Mathematics 1*a*.....5 (Algebra)	Mathematics 1*b*.....4 (Algebra)	Mathematics 1*c*.....4 (Algebra)
Mathematics 2*a*.....4 (Plane Geom.)	Mathematics 2*b*.....5 (Plane Geom.)	Mathematics 2*c*.....5 (Solid Geom.)
History 1*a*.....4 (American)	History 1*b*.....4 (Government)	Physics 1.....4 (2) (Elementary)
Drawing 1*a*..... (4) (Elementary)	Mech. Eng. 1*b*..... (4) (Woodwork)	Mech. Eng. 2..... (8) (Foundry & Pattern Making)
Mech. Eng. 1*a*..... (4) (Woodwork)	Drawing 1*b*..... (4) (Object)	Pub. Speaking 1*c*..... (2) (Expression)
Pub. Speaking 1*a*..... (2) (Expression)	Pub. Speaking 1*b*.. (2) (Expression)	Mech. Eng. 20*c*.....3 (2) (Elements of Engineering)
Mech Eng. 20*a*.....3 (2) (Elements of Engineering)	Mech. Eng. 20*b*.....3 (2) (Elements of Engineering)	Physical Training
Physical Training	Physical Training	

All engineering students who receive credit in History 1*a* and 1*b*, and Physics 1, must take in place thereof German or Spanish, four hours each term.

All engineering students who receive credit in English 1*a*, 1*b* and 1*c* are required to take M. E. 20*a*, 20*b* and 20*c*.

SOPHOMORE YEAR

FALL TERM	WINTER TERM	SPRING TERM
English 2*a*.....4	English 2*b*.....4	English 2*c*.....4
Mathematics 3.....5 (Trigonometry)	Mathematics 4*a*.....3 (Analytics)	Mathematics 4*b*.....3 (Analytics)
Chemistry 1*a*.....3 (4) (Inorganic)	Chemistry 1*b*.....3 (4) (Inorganic)	Physics 2.....3 (2) (Electr. & Magn.)
Mech. Eng. 5.....3 (Mechanics)	Arch. Eng. 17*a*.....3 (4) (Descrip. Geom.)	Arch. Eng. 17*b*.....3 (4) (Descrip. Geom.)
Mech. Eng. 6*a*..... (6) (Mech. Drawing)	Mech. Eng. 6*b*..... (6) (Mech. Drawing)	Mech. Eng. 6*c*..... (4) (Mech. Drawing)
		Civil Eng. 1..... (4) (Surveying)

Mechanical Engineering

JUNIOR YEAR

FALL TERM	WINTER TERM	SPRING TERM
Physics 4.....3 (2) (Heat & Mech.)	Physics 3.....3 (2) (Sound & Light)	Mathematics 6c.....4 (Calculus)
Mathematics 6a.....4 (Calculus)	Mathematics 6b.....4 (Calculus)	Civil Eng. 10b.....4 (Applied Mech.)
Mech. Eng. 9a..... (4) (Adv. Mech. Drawing)	Civil Eng. 10a.....5 (Applied Mech.)	Elec. Eng. 3..... (2) (Wiring & Distr.)
Elec. Eng. 1a.....2 (2) (Ele. Elec. Eng.)	Elec. Eng. 1b.....2 (2) (Ele. Elec. Eng.)	Mech. Eng. 12.....2 (Engines & Boilers)
Mech. Eng. 8.....2 (Kinematics)	Mech. Eng. 11a.....2 (Thermo-dynamics)	Mech. Eng. 4..... (8) (Machine Shop)
Mech. Eng. 3a..... (6) (Blacksmithing)	Mech. Engr. 10b.... (2) (Laboratory)	Mech. Eng. 9b..... (4) (Adv. Mech. Drawing)
Mech. Eng. 10a..... (4) (Laboratory)		Mech. Eng. 10c..... (2) (Laboratory)
		Mech. Eng. 11b.....2 (Thermodynamics)

SENIOR YEAR

FALL TERM	WINTER TERM	SPRING TERM
Mech. Eng. 13a.....3 (4) (Machine Design)	Mech. Eng. 13b.....4 (2) (Mach. Design)	Mech. Eng. 13c.....2 (4) (Mach. Design)
Elec. Eng. 7a.....2 (2) (Alt. Currents)	Elec. Eng. 7b.....2 (2) (Alt. Currents)	Elec. Eng. 7c.....3 (4) (Alt. Currents)
Civil Eng. 18.....3 (2) (Str. of Materials)	Mech. Eng. 15.....3 (4) (Gas Engines)	Civil Eng. 20.....3 (Contracts & Specifications)
Mech. Eng. 14.....3 (2) (Hydraulics)	Mech. Eng. 16.....2 (4) (Steam Power Plants)	Mech. Eng. 18.....3 (Heating & Ventilating)
Social Science 1.....4 (Com. Usages)	Mech. Eng. 17.....1 (Seminar)	Elec. Eng. 12.....1 (4) (Electric Plants)
	Mech. Eng. 19a..... (4) (Thesis)	Mech. Eng. 19b.....4 (Thesis)

Electrical Engineering

JUNIOR YEAR

FALL TERM	WINTER TERM	SPRING TERM
Physics 4.....3 (2) (Heat & Mech.)	Physics 3.....3 (2) (Sound & Light)	Mathematics 6c.....4 (Calculus)
Mathematics 6a.....4 (Calculus)	Mathematics 6b.....4 (Calculus)	Civil Eng. 10b.....4 (Applied Mech.)
Mech. Eng. 9a..... (4) (Adv. Mech. Drawing)	Civil Eng. 10a.....5 (Applied Mech.)	Elec. Eng. 3..... (2) (Wiring & Distr.)
Elec. Eng. 1a.....2 (2) (Ele. Elec. Eng.)	Elec. Eng. 1b.....2 (2) (Ele. Elec. Eng.)	Elec. Eng. 5.....2 (4) (Electro. Chem.)
Mech. Eng. 3a..... (6) (Blacksmithing)	Mech. Eng. 11a....2 (Thermo-dynamics)	Mech. Eng. 4..... (8) (Machine Shop)
Elec. Eng. 2a.....1 (Seminar)	Elec. Eng. 2b.....1 (Seminar)	Elec. Eng. 2c.....1 (Seminar)
Mech. Eng. 10a..... (4) (Laboratory)	Mech. Eng. 10b.... (2) (Laboratory)	Mech. Eng. 11b.....2 (Thermodynamics)

SENIOR YEAR

FALL TERM	WINTER TERM	SPRING TERM
Mech. Eng. 13a.....3 (4) (Mach. Design)	Mech. Eng. 13b.....4 (2) (Mach. Design)	Civil Eng. 20.....3 (Contracts & Specifications)
Civil Eng. 18.....3 (2) (Str. of Materials)	Mech. Eng. 16.....2 (4) (Steam Power Plants)	Elec. Eng. 12.....1 (4) (Electric Plants)
Elec. Eng. 6.....2 (2) (Photometry & Light)	Elec. Eng. 9.....1 (4) (Dynamo Design)	Elec. Eng. 13.....1 (2) (Sub-Stations & Switchboards)
Elec. Eng. 7a.....2 (2) (Alt. Currents)	Elec. Eng. 10.....2 (High Voltage Transmission)	Elec. Eng. 7c.....3 (4) (Alt. Currents)
Elec. Eng. 8a.....1 (Seminar)	Elec. Eng. 7b.....2 (2) (Alt. Currents)	Elec. Eng. 8c.....1 (Seminar)
Social Science 1.....4 (Com. Usages)	Elec. Eng. 8b.....1 (Seminar)	Elec. Eng. 14.....2 (Tel. & Tel.)
	Elec. Eng. 11.....2 (Elec. Railways)	Elec. Eng. 15.....1 (Wireless Teleg.)
		Elec. Eng. 16..... (6) (Thesis)

Civil Engineering

JUNIOR YEAR

FALL TERM		WINTER TERM		SPRING TERM	
Physics 4 (Heat & Mech.)	3 (2)	Physics 3 (Sound & Light)	3 (2)	Civil Eng. 6 (Roads & Pavement)	3
Mathematics 6a (Calculus)	4	Mathematics 6b (Calculus)	4	Mathematics 6c (Calculus)	4
Civil Eng. 2 (Topo. Surveying)	2 (4)	Civil Eng. 4 (Graphics)	1 (4)	Civil Eng. 5 (Roof Trusses)	2 (6)
Civil Eng. 3 (Ry. Surveying)	2 (4)	Mech. Eng. 3b (Blacksmithing)	(4)	Mech. Eng. 4 (Machine Shop)	(8)
Elec. Eng. 1a (Ele. Elec. Eng.)	2 (2)	Elec. Eng. 1b (Ele. Elec. Eng.)	2 (2)	Civil Eng. 10b (Applied Mech.)	4
Arch. Eng. 4 (Lettering)	(2)	Civil Eng. 10a (Applied Mech.)	5		

SENIOR YEAR

FALL TERM		WINTER TERM		SPRING TERM	
Civil Eng. 7 (Retaining Walls & Dams)	(2)	Civil Eng. 14 (Masonry Const.)	4	Arch. Eng. 12 (Estimates)	2
Civil Eng. 8 (Irrigation Eng.)	2	Civil Eng. 15 (Reinforced Con.)	3	Civil Eng. 20 (Contracts & Specifications)	3
Civil Eng. 11 (Hydraulics)	3 (2)	Civil Eng. 16 (Sanitary Eng.)	4	Civil Eng. 17 (Water Supply)	4
Civil Eng. 12 (Bridge Stresses)	3 (4)	Civil Eng. 13a (Bridge Design)	1 (6)	Civil Eng. 13b (Bridge Design)	1 (6)
Civil Eng. 18 (Str. of Materials)	3 (2)	Civil Eng. 19a (Railroad Eng.)	2	Civil Eng. 19b (Railroad Eng.)	2
Social Science 1 (Com. Usages)	4	Civil Eng. 21a (Seminar)	1	Civil Eng. 21b (Seminar)	1
		Civil Eng. 22 (Testing Lab.)	(4)	Civil Eng. 23 (Thesis)	(8)

Architectural Engineering

JUNIOR YEAR

FALL TERM		WINTER TERM		SPRING TERM	
Physics 4 (Heat & Mech.)	3 (2)	Physics 3 (Sound & Light)	3 (2)	Elec. Eng. 3 (Wiring & Distr.)	(2)
Mathematics 6a (Calculus)	4	Mathematics 6b (Calculus)	4	Mathematics 6c (Calculus)	4
Arch. Eng. 1 (Build. Materials)	5	Civil Eng. 4 (Graphics)	1 (4)	Civil Eng. 5 (Roof Trusses)	2 (6)
Arch. Eng. 2 (Hist. of Arch.)	3	Civil Eng. 10a (Applied Mech.)	5	Civil Eng. 10b (Applied Mech.)	4
Arch. Eng. 3 (Working Drawings)	(6)	Arch. Eng. 5 (Plumbing)	2	Arch. Eng. 7 (Orders of Arch.)	(4)
Arch. Eng. 4 (Lettering)	(2)	Arch. Eng. 6 (Bldg. Details)	(4)	Arch. Eng. 8 (Perspective)	(4)
				Arch. Eng. 9 (Pen & Ink Rend.)	(4)

SENIOR YEAR

FALL TERM		WINTER TERM		SPRING TERM	
Civil Eng. 12 (Bridge Stresses)	3 (4)	Civil. Eng. 14 (Masonry Const.)	4	Mech. Eng. 18 (Heating & Ventilating)	3
Civil Eng. 18 (Str. of Materials)	3 (2)	Civil Eng. 15 (Rein. Con.)	3	Civil Eng. 20 (Contracts & Specifications)	3
Arch. Eng. 10a (Arch. Design)	(6)	Civil Eng. 22 (Testing Lab.)	(4)	Arch. Eng. 12 (Estimates)	2
Arch. Eng. 14a (Seminar)	1	Arch. Eng. 10b (Arch. Design)	(10)	Arch. Eng. 14c (Seminar)	1
Arch. Eng. 18 (Ornament)	(2)	Arch. Eng. 11 (Steel Con.)	3	Arch. Eng. 13 (Superintendence)	2
Drawing 7a (Water Colors)	(4)	Arch. Eng. 14b (Seminar)	1	Arch. Eng. 15b (Thesis)	(18)
Social Science 1 (Com. Usages)	4	Drawing 7b (Water Colors)	(4)		

Department of Mechanical Engineering

R. E. CHANDLER, *Professor*
CHARLES JABLOW, *Assistant Professor*
E. E. BREWER, *Foreman of Shops*
C. W. SKINNER, *Instructor in Wood Shop*
F. R. BRADLEY, *Instructor in Machine Shop*

The object of the instruction offered in this Department is to train young men in a broad way for successful careers in the profession of Mechanical Engineering.

A graduate of this Department has as his working tools a knowledge of the fundamental principles underlying the design, construction, operation and testing of steam boilers and engines; turbines; gas, compressed air and refrigerating machinery. These subjects are developed by thorough courses in mechanical drawing, in thermodynamics, in steam and gas engineering, and also courses in applied mechanics and hydraulics.

The economic side of engineering is not forgotten in the discussions of the use of various engineering apparatus.

To supplement these courses a student has the broadening influences, due to requirements of a certain amount of work in other engineering courses, such as electrical engineering, contracts and specifications, surveying and others.

The early part of the course is devoted to a thorough groundwork in English, mathematics and physics. Practical work in the College Shops is begun as soon as the student has progressed sufficiently to understand the reasons for the various operations.

Commencing with the Sophomore year, considerable time each week is devoted to mechanical drawing, which is continued throughout the remainder of the course, either as such, or as a part of other courses, such as power plant design, machine design, etc. A strong course in descriptive geometry is carried throughout the two terms of the Sophomore year, being of great assistance in mechanical drawing and designing work of the Junior and Senior years. The problems set and the work done in these courses are of an eminently practical nature.

The Junior year marks the beginning of the work in mechanical engineering, as differentiated from civil, electrical and architectural. The work consists of the study of mechanical movements, with their application to practical problems on the drawing board, the consideration of the theory of steam and other heat

engines, both in the classroom and in the laboratory, and a course in steam boiler design. Together with these mechanical engineering courses, very thorough instruction in physics (including sound, light and electricity and magnetism), applied mechanics, and more advanced mathematics is given in this stage of advancement in the course.

The laboratory work in the Mechanical Engineering course is done according to a well considered schedule. The student is usually assigned an experiment a week or more in advance, and is expected to come to the laboratory prepared to do the work assigned. The results of the experiment are reported, the students make their own observations and calculations, and write out in detail exactly the work that has been done, and the results obtained. The work is carefully supervised, the reports graded and returned to the student for corrections. This laboratory work is carried throughout the entire Junior year and part of the Senior year.

In the Junior year, also, considerable work is done in the forge and machine shops; the conditions being made to approach modern manufacturing practice as nearly as possible. To make hand and mind work in synchronism is the aim of the Department.

The work of the Senior year is of a more technical nature. Broad theoretical and practical courses in machine design, heating and ventilating, mechanics of materials, gas engine design and operation, and the design of complete steam and electric power plants are given.

Each Senior student is required to write a thesis, giving the results of original research, or some important testing or designing work which he has carried on during the year.

All more advanced students are required to visit practically all the power plants and industrial establishments in Stillwater and vicinity and submit a paper, which is read to the class, in which the good or bad features of the plant are brought out, and also the economic reasons for its existence in its present location and condition, are given.

The work of the various divisions has been carefully balanced so that a student gets a well rounded and well balanced technical education.

There are four drawing rooms, two of which are devoted to work in mechanical engineering. The Sophomore room accommodates forty-eight students, the Junior and Senior room thirty-two. These rooms are well lighted, and the appearance of the place is an incentive to good work. Students are permitted the use of the room from 8:00 a. m. to 5:30 p. m. for the utilization of spare moments during the day.

The mechanical laboratory equipment is found in the material testing laboratory, steam laboratory and the hydraulic laboratory. Use is also made of the equipment at the College power plant, for fuel tests, pump tests, moisture tests of steam and various other experiments.

In the material testing laboratory is a 100,000-pound Reihle testing machine, an impact testing machine, two large cases containing instruments for making tests, and various other equipment for carrying on the work to best advantage.

The steam laboratory is equipped with a horizontal, return tubular boiler for experimental purposes. Steam from this boiler is piped to injectors, two steam engines, a locomotive type air compressor, and a large manifold for testing thermometers, gauges, indicators, etc. Besides the above mentioned apparatus, this laboratory contains two horizontal gasoline engines and one four-cylinder automobile engine. Numerous gauges, thermometers, calorimeters and other small apparatus, several prony brakes and one Alden absorption dynamometer are available for carrying on tests in the laboratory and for thesis work.

The hydraulic laboratory contains a Pelton wheel, a hydraulic ram, a motor-driven centrifugal pump, apparatus for determining flow, over weirs, in flumes, through sewer tile, in pipe lines, through orifices and for various other hydraulic experiments.

The forge shop has twenty-four down-draft forges, air being supplied by a forced-blast fan,and smoke being exhausted through hoods by a vacuum exhaust system. A power hammer has been installed recently. The foundry has an 18-inch cupola, core oven and sifter, foundry benches and tools. A large pit in the floor is used for a casting bed.

The Machine Shop is equipped with lathes, shapers, milling machine, planer, universal grinder, drill presses, pipe cutting ma-

chines, and an extensive assortment of small tools, well kept in a carefully arranged toolroom. Stress is laid on accuracy of measurement.

The Woodworking and Pattern Shop is equipped with a circular saw, a band saw, surfacer, wood turning lathes, patternmakers' lathes, and work benches, with a complete equipment of tools. Each student is assigned a kit of small tools, which are his to use and to keep in order as long as he works in that Department.

SUBJECTS

1*a-b*. WOODWORKING.—Freshman year, fall and winter terms; four hours practicum per week. Required: Engr., Agr. (1*a* winter term), Normal (1*a* winter term—men).

Bench work in wood; sawing, planing and joining; center and chuck turning in wood; instruction in care and use of tools.

2. PATTERNMAKING AND FOUNDRY.—Freshman year, spring term; eight hours practicum per week. Required: Engr. Prerequisites: M. E .1*a*, 1*b*.

Construction of patterns; molding in sand; core making; melting iron and pouring castings.

3*a*. BLACKSMITHING.—Junior year, fall term; six hours practicum per week. Required: M. E., E. E.

Iron and steel forging; drawing; upsetting; welding and tempering.

3*b*. BLACKSMITHING.—Junior year, winter term; four hours practicum per week. Required: C. E.

Iron and steel forging; drawing; upsetting; welding and tempering.

3*c*. BLACKSMITHING.—Freshman year, fall term; two hours practicum per week. Required: Agr.

Iron and steel forging; drawing; upsetting; welding and tempering; horseshoeing; farm blacksmithing.

4. MACHINE SHOP.—Junior year, spring term; eight hours practicum per week. Required: M. E., E. E., C. E.

Filing and chipping; metal work on lathes, planer, shaper and milling machine.

5. MECHANICS.—Sophomore year, fall term; three hours theory per week. Required: Engr. Prerequisite: Math. 2*c*.

Elementary course in mechanics, including statics and kinetics.

6*a-b-c*. MECHANICAL DRAWING.—Sophomore year, fall, winter and spring terms; six hours practicum per week, fall and winter terms; four hours practicum per week, spring term. Required: Engr.

Fall term: Lettering and use of instruments. Winter term: Drawing from copy. Spring term: Elementary design.

8. KINEMATICS.—Junior year, fall term; two hours theory per week. Required: M. E. Prerequisites: M. E. 6*a*, 6*b*.

Study of mechanical movements, including gearing, belting, linkage, etc.

9*a-b*. ADVANCED MECHANICAL DRAWING.—Junior year, fall and spring terms; four hours practicum per week. Required: M. E., E. E. (9*a*). Prerequisites: M. E. 6*b*, 6*c*.

Design of gears and cams, and elementary machine design, fall term. Boiler design, spring term.

10*a-b-c*. MECHANICAL LABORATORY.—Junior year, fall, winter and spring terms; four hours practicum per week, fall term; two hours practicum per week, winter and spring terms. Required: M. E., E. E. (10*a*, 10*b*).

Tests on various engineering appliances, engines, etc.

11*a-b*. THERMODYNAMICS.—Junior year, winter and spring terms; two hours theory per week. Required: M. E., E. E. Prerequisite: Math. 6*a*.

Study of thermodynamics of steam engines, air engines and gas engines.

12. STEAM ENGINES AND BOILERS.—Junior year, spring term; two hours theory per week. Required: M. E.

Study of steam engines and boilers, and auxiliaries.

13*a-b-c*. MACHINE DESIGN.—Senior year, fall, winter and spring terms; three hours theory and four hours practicum per week, fall term; four hours theory and two hours practicum per week, winter term; two hours theory and four hours practicum per week, spring term. Required: M. E., E. E. (13*a*, 13*b*).

The fall and winter terms are spent in the design of mechanical parts. Spring term, engine design. The practicum will be drafting work, design, machines and machine parts.

14. HYDRAULICS.—Senior year, fall term; three hours theory and two hours practicum per week. Required: M. E. Prerequisites: Math. 6*a*, M. E. 10*a*, 10*b*, 10*c*.

Study of hydraulics and waterpower development.

5. Gas Engines.—Senior year, winter term; three hours theory and four hours practicum per week. Required: M. E. Prerequisites: M. E. 10*a*, 10*b*, 10*c*, 11*a*, 11*b*.

A study of internal combustion engines and gas producers. Practicum will be the testing of gas engines.

6. Steam Power Plants.—Senior year, winter term; two hours theory and four hours practicum per week. Required: M. E., E. E. Prerequisites: M. E. 10*a*, 10*b*, 10*c*.

Study and design of steam power plants.

7. Seminar.—Senior year, winter term; one hour theory per week. Required: M. E.

Discussion of articles in leading technical magazines.

8. Heating and Ventilating.—Senior year, spring term; three hours theory per week. Required: M. E., A. E.

Study of steam, hot water, gravity and forced hot air systems of heating.

9*a-b*. Thesis.—Senior year, winter and spring terms; four hours practicum per week. Required: M. E.

Original experiments, investigation or design in some branch of mechanical engineering.

10*a-b-c*. Elements of Engineering.—Freshman year, fall, winter and spring terms; three hours theory and two hours practicum per week. Required of all Freshman engineering students who receive credit in English. Optional for other Freshman Engineering students.

Elementary study of the steam engine and other prime movers, and other general engineering subjects.

Department of Electrical Engineering and Physics

Arlington P. Little, *Associate Professor*
Oscar L. Britt, *Assistant*

The Electrical Engineering course gives the student a thorough working knowledge of the fundamental principles underlying the operation of electrical machinery. It is expected that after obtaining the proper practical experience the graduate will be able to act successfully as a designer or manager in any of the electrical industries or to take charge of construction work.

A thorough mathematical preparation is essential to the more advanced electrical courses, especially those in alternating currents. The courses on the theory of electrical machinery are sup-

plemented by practice in calculating and designing such machines in the drawing room.

In the Junior and Senior years, the work is carried on by lectures, recitations and laboratory practice in the management and testing of electrical machinery. The lectures and recitations cover explanations of theoretical principles underlying the action of the various machines and apparatus, together with discussions of modern practice in all the important subdivisions of electrical engineering. Laboratory practice consists in performing experiments, making measurements and testing machines and apparatus, similar to the commercial testing carried on by manufacturing companies. This work includes electrical measurements; theory, design and testing of rotary converters and transformers; storage batteries, arc and incandescent lamp testing; power plant and sub-station design; long distance power transmission; and systems of power distribution; electric lighting, electrical wiring; telegraph and telephone engineering, wireless telegraphy, etc.

In the new Engineering Building considerable space has been set aside for the electrical testing and experimental laboratories.

The main or commercial testing electrical laboratory is located on the first floor of the new Engineering Building. The electrical equipment has been selected and arranged in such a manner as to afford students the greatest facility for acquiring a thorough knowledge of different types of electrical machinery, their management and methods of testing. Especial attention has been devoted to alternating current machinery—justified it is believed, by the rapid development of this branch of engineering. Power is furnished by a 30 k. w., a 40 k. w. and a 100 k. w. dynamo, directly connected to automatic engines. The other electrical machines consist of direct current series shunt and compound dynamos and motors, alternating current transformers, Scott phase-changing transformers, 2-phase and 3-phase rotary converters, single-phase, 2-phase and 3-phase induction motors, all of latest design. The laboratory is well supplied with all necessary measuring instruments, including voltmeters, ammeters, and wattmeters of wide range for alternating and direct current, tachometers, etc., as well as galvometers and other instruments of great precision. Two rooms are devoted to photometric work. These contain a photometer with accessories and light standards and the

principal types of arc and incandescent lamps. Tests are made on these lamps to determine their efficiency, candlepower, distribution of light, their construction and general characteristics. As standards of comparison in the photometric work there are used lamps carefully tested by the United States Bureau of Standards.

North of the main electrical laboratory is the standardization laboratory, and it is equipped with a Weston standard voltmeter, a Leeds and Northup potentiometer and other standard instruments. At the beginning of each year the electrical instruments are standardized by comparison with the potentiometer, in order that electrical measurements made in performing laboratory experiments may be accurate.

Adjoining the standardization laboratory is the storage battery room in which is placed the 220-volt storage battery for the Leeds and Northup potentiometer, the battery for operating the class-bell system, and other batteries for experimental purposes.

The wireless telegraph room is located on the top floor of the Engineering Building. The equipment consists in part of a 1,000-watt, oil-cooled transformer, keys for heavy current, sending helix, receiving transformers of the direct and inductively coupled types, condensers, potentiometers, 3,000-ohm and 1,000-ohm head phones, switches, batteries, etc. With a suitable aerial the station has a range of several hundred miles. The power wires running from the main electrical laboratory to the wireless telegraph room are of sufficient size to permit the use of a 12,000-watt 220-volt transformer.

The lecture room is provided with terraced seats to permit students to readily see experiments performed on the lecture table. It is equipped with a combination lantern slide and opaque projectroscope which is used in illustrated lectures.

The large laboratory on the second floor, although intended primarily as a general physics laboratory, will be used also for elementary electrical experiments, also for electroplating, electrotyping, electrolytic refining of metals and general electro-metallurgy.

The facilities of the laboratories in the Senior year are to be employed in the preparation of a graduating thesis, and original work is required of each student. For original experiments in this connection, instruments of high precision are placed at the

disposal of Senior students, and the workshops of the College afford opportunity for the construction of special apparatus.

The courses offered in physics embrace mechanics, pneumatics, hydrostatics, heat, sound, light, electricity and magnetism. The lectures and recitations are supplemented by practice work in the physics laboratory.

SUBJECTS

1*a-b*. ELEMENTS OF ELECTRICAL ENGINEERING.—Junior year, fall and winter terms; two hours theory and two hours practicum per week. Required: M. E., E. E., C. E. Prerequisites: Physics 2.

Electro-magnetic systems of units; switchboards; theory and practical management of direct current dynamos and motors.

2*a-b-c*. JUNIOR SEMINAR.—Fall, winter and spring terms; one hour theory per week. Required: E. E.

Discussion of articles on electrical engineering in technical magazines.

3. ELECTRICAL WIRING AND DISTRIBUTION OF POWER.—Junior year, spring term; two hours practicum per week. Required: M. E., E. E., A. E.

Systems of direct and alternating current; distribution of power; testing; practical lighting and motor wiring.

5. ELECTRO CHEMISTRY.—Junior year, spring term; two hours theory and four hours practicum per week. Required: E. E. Prerequisites: Physics 2, Chem. 1*a*, 1*b*.

Electrolytic refining of metals; electroplating, electrotyping; polishing and burnishing; electric furnace work; care and management of storage batteries.

6. PHOTOMETRY AND ELECTRIC LIGHTING.—Senior year, fall term; two hours theory and two hours practicum per week. Required: E. E.

The underlying principles of illuminating engineering; study and test of arc and incandescent lamps; practice in laying out wiring plans for buildings; specifications covering these plans.

7*a-b-c*. ALTERNATING CURRENTS AND ALTERNATING CURRENT MACHINERY.—Senior year, fall, winter and spring terms; two hours theory and two hours practicum per week, fall and winter terms; three hours theory and four hours practicum per week, spring term. Required: M. E., E. E. Prerequisites: E. E. 1*a*, 1*b*, Math. 6*a*, 6*b*, 6*c*.

Theory of alternating currents and alternating machinery; measuring instruments; commercial testing of alternators; alternating current motors and transformers.

8*a-b-c*. SENIOR SEMINAR.—Fall, winter and spring terms; one hour theory per week. Required: E. E.

Discussion of important articles on advanced electrical engineering work in technical magazines and the Transactions of American Institute of Electrical Engineers.

9. DYNAMO DESIGN.—Senior year, winter term; one hour theory and four hours practicum per week. Required: E. E. Prerequisites: E. E. 1*a*, 1*b*.

Design of direct current generators and motors and their controlling devices, and comparison of results with commercial machinery of same rating.

10. HIGH VOLTAGE TRANSMISSION.—Senior year, winter term; two hours theory per week. Required: E. E. Prerequisite: E. E. 7*a*.

Calculation of high voltage transmission lines; discussion of the special difficulties encountered in long distance power transmission; details of line construction.

11. ELECTRIC RAILWAYS.—Senior year, winter term; two hours theory per week. Required: E. E. Prerequisite: E. E. 7*a*.

Direct and alternating current railway systems; overhead construction; rotary converters; transformer sub-stations; electrification of steam railroads; train performance diagrams.

12. POWER PLANT DESIGN.—Senior year, spring term; one hour theory and four hours practicum per week. Required: M. E., E. E. Prerequisites: E. E. 1*a*, 1*b*, 7*a*, 7*b*.

Design of alternating current and direct current isolated power plants and central stations.

13. SUB-STATIONS AND SWITCHBOARDS.—Senior year, spring term; one hour theory and two hours practicum per week. Required: E. E. Prerequisites: E. E. 1*a*, 1*b*, 7*a*, 7*b*.

Location of rotary converter and transformer sub-stations; low and high potential switchboards; arrangement of apparatus and instruments; details of wiring.

14. TELEGRAPH AND TELEPHONE ENGINEERING.—Senior year, spring term; two hours theory per week. Required: E. E. Prerequisites: E. E. 1*a*, 1*b*.

A study of the principal telephone and telegraph systems; relays; repeaters; duplex and quadruplex telegraph; high speed telegraphy; writing and printing telegraph.

15. WIRELESS TELEGRAPHY.—Senior year, spring term; one hour theory per week. Required: E. E. Prerequisites: E. E. 7*a*, Physics 2.

A study of the various systems of wireless telegraphy; plain and sytonic; erecting stations; adjusting apparatus and sending and receiving signals.

16. THESIS.—Senior year, spring term; six hours practicum per week. Required: E. E.
Original experiments and investigations in some important branch of electrical engineering.

PHYSICS

1. ELEMENTARY PHYSICS.—Freshman year, spring term; four hours theory and two hours practicum per week. Required: Engr., Sci. & Lit., Dom. Sci., Normal. Prerequisite: Math. 1*a*.
Force, power, work, energy; simple machines; properties of solids, liquids and gases; absolute and gravitational units; composition and resolution of forces; specific gravity; measurement of temperature; fusion; vaporization; specific heat; conduction, convection and radiation.

2. ELECTRICITY AND MAGNETISM.—Sophomore year, spring term; three hours theory and two hours practicum per week. Required: Engr. Elective: Sci. & Lit. (Junior), Normal (Junior). Prerequisite: Math. 3.
Electric attraction and repulsion; the electroscope; induction; condensers; capacity; primary and secondary batteries; Ohms law; calculation of resistance; electrical measuring instruments; electrolysis; electromotive force and current; Wheatstone bridge; natural and artificial magnets; field of force; the compass; electromagnets; the telegraph and telephone.

3. SOUND AND LIGHT.—Junior year, winter term; three hours theory and two hours practicum per week. Required: M. E., E. E., C. E., A. E. Elective: Sci. & Lit., Normal. Prerequisite: Math. 3.
Sound waves, simple and complex; transmission and reflection of sound; resonance; musical sound waves; transverse and longitudinal vibrations; pitch and quality; interference. Light waves; photometry; velocity of light; reflection; refraction; mirrors; plane, convex and concave lenses; construction and theory of the telescope, microscope and other optical instruments; the spectroscope and spectrum analysis; polarization of light.

4. HEAT AND MECHANICS (advanced course).—Junior year, fall term; three hours theory and two hours practicum per week. Required: M. E., E. E., C. E., A. E. Elective: Sci. & Lit., Normal. Prerequisite: Math. 3.
Kinematics; dynamics; statics; fluid motion; bouyancy; elasticity; mechanics of liquids and gases; thermometry; heat engines.

5. ELEMENTARY PHYSICS.—Freshman year, fall term; four hours theory and two hours practicum per week. Required: Agr., Com. & Mark. Prerequisite: Sub-Freshman Algebra.
Motion and force; acceleration; composition and resolution of forces; centrifugal forces; the pendulum; principle of moments; molecular forces; Boyle's law; bouyancy, specific gravity; the barometer; temperature and thermometers; measurements of heat; change of state; conduction, convection and radiation.

Department of Civil Engineering

Alfred Boyd, *Professor*

The work in this Department is designed to furnish a thorough course of theoretical and practical instruction in the various branches of civil engineering. During the first two years the work is the same as in other Engineering Departments.

This Department is well supplied with surveying instruments, including transits, wye and dumpy levels, railroad compass, plane table, barometer, hand-levels, clinometer, chains, tapes and rods.

The laboratory for testing cement and road materials occupies the northwest corner of the basement floor in the Engineering Building. It is provided with the usual apparatus for the testing of cement, including a Fairbanks' and an Olsen briquette machine, molds for making briquettes, sieves for testing sand and cement, moist closet, boiling apparatus, Vicat and Gillmore needles, specific gravity and permeability apparatus. Ample facilities are thus furnished for the testing of cement and concrete, and use is also made of the 100,000-pound Riehle testing machine. The machines for testing road materials are also in this laboratory, and include an abrasion machine, a hardness machine, impact machine, diamond drill, saw and crusher.

The testing of the various materials used in construction, such as wood, steel, cast iron, brick, stone, etc., is required of all engineering students during the fall term.

The theoretical instruction in hydraulics is supplemented by work in the hydraulic laboratory. This is provided with water from the city mains, and water is also supplied by means of a centrifugal pump raising water from a concrete pit in the laboratory to a steel tank on the roof. Measurements of flow are made for weirs, nozzles, sewer pipe and flumes. Tests of a Pelton wheel, of a centrifugal pump, and field measurements of flow by means of a current meter are also made.

The drawing room for this Department is well equipped. There is a good collection of working drawings and designs, which are used for reference in connection with the work in several of the courses.

SUBJECTS

1. SURVEYING.—Sophomore year, spring term; four hours practicum per week. Required: Engr.

   Theory, use and adjustment of instruments; field work, computations and reports, maps and profiles; U. S. land surveying.

2. TOPOGRAPHIC SURVEYING.—Junior year, fall term; two hours theory and four hours practicum per week. Required: C. E.

   Theory of plane table and stadia; different methods of making topographic surveys; use of the barometer and base line apparatus; a complete survey and topographic map, based on a system of triangulation, is made by plane table and stadia methods; topographic signs.

3. RAILROAD SURVEYING.—Junior year, fall term; two hours theory and four hours practicum per week. Required: C. E.

   The geometry of the simple, compound, reverse and transition curve is considered; turnouts; computation of earthwork; field practice in laying out curves. A complete survey is made of a short line of railroad; maps and profiles are made in the office, and cost computed.

4. GRAPHICS.—Junior year, winter term; one hour theory and four hours practicum per week. Required: C. E., A. E.

   Graphical analysis of structures. Stresses in roof trusses due to dead and wind loads.

5. ROOF TRUSSES.—Junior year, spring term; two hours theory and six hours practicum per week. Required: C. E., A. E.

   Stresses by algebraic methods. A complete design is made of a truss in wood and one in steel. Computations are made and a study of the practical details of construction.

6. ROADS AND PAVEMENTS.—Junior year, spring term; three hours theory per week. Required: C. E.

   A study of the best methods of construction and maintenance of different types of country roads and city pavements, including allowable grades, drainage and methods of assessment.

7. RETAINING WALLS AND DAMS.—Senior year, fall term; two hours practicum per week. Required: C. E.

   Earth and water pressure; stability of walls and dams; design of walls, dams and foundations.

8. IRRIGATION ENGINEERING.—Senior year, fall term; two hours theory per week. Required: C. E.

   Grades, cross-sections and capacity of canals; surveys; designs of structures; sources of water supply; analysis of hydrographic data; Oklahoma streams; application to crops; irrigation by pumping; irrigation law.

10*a-b*. Applied Mechanics.—Junior year, winter and spring terms; five hours theory per week, winter term; four hours theory per week, spring term. Required: M. E., E. E., C. E., A. E. Prerequisite: Math. 6*a*.

Center of gravity; moment of inertia; theory of structures; friction; cables; work and energy; impact; motion.

11. Hydraulics.—Senior year, fall term; three hours theory and two hours practicum per week. Required: C. E.

Pressure and motion of water; laws of flow over weirs, through orifices, tubes, nozzles, pipes, conduits, canals and rivers; meters and measurements of discharge; motors, turbines and water-wheels.

12. Bridge Stresses.—Senior year, fall term; three hours theory and four hours practicum per week. Required: C. E., A. E.

Analysis of different types of bridges and other framed structures; design of abutments and piers.

13*a-b*. Bridge Design.—Senior year, winter and spring terms; one hour theory and six hours practicum per week. Required: C. E.

A complete design, with detailed drawings, is made of a plate girder bridge, a steel truss, and a short-span, reinforced concrete arch.

14. Masonry Construction.—Senior year, winter term; four hours theory per week. Required: C. E., A. E.

Materials of construction, including cement, concrete, brick and stone; fireproofing. Ordinary and deep foundations.

15. Reinforced Concrete.—Senior year, winter term; three hours theory per week. Required: C. E., A. E.

Theory and practice in the design of reinforced concrete.

16. Sanitary Engineering.—Senior year, winter term; four hours theory per week. Required: C. E.

The design and construction of sewerage systems; separate and combined systems; size of sewers; plans and estimates of cost; construction; modern methods of sewage disposal.

17. Water Supply.—Senior year, spring term; four hours theory per week. Required: C. E.

Source and supply; methods of furnishing, purifying and distributing; design of reservoirs, tanks and standpipes.

18. Strength of Materials.—Senior year, fall term; three hours theory and two hours practicum per week. Required: M. E., E. E., C. E., A. E.

Strength and deflection of beams, girders, columns, shafts; the properties of materials.

19*a-b*. RAILROAD ENGINEERING.—Senior year, winter and spring terms; two hours theory per week. Required: C. E.

Methods of construction and maintenance of roadbed and structures; surveys and estimates; organization; signalling; economic theory as applied to location and operation.

20. CONTRACTS AND SPECIFICATIONS.—Senior year, spring term; three hours theory per week. Required: M. E., E. E., C. E., A. E.

The law of contracts as applied to engineering practice; the technical features of specifications; relation of engineer and contractor.

21*a-b*. CIVIL ENGINEERING SEMINAR.—Senior year, winter and spring terms; one hour theory per week. Required: C. E.

Readings and reports on current civil engineering subjects, as discussed in technical magazines.

22. TESTING LABORATORY.—Senior year, winter term; four hours practicum per week. Required: C. E., A. E.

Laboratory examinations of the various materials of construction.

23. THESIS.—Senior year, spring term; eight hours practicum per week. Required: C. E.

Original investigation of some engineering subject.

Department of Architectural Engineering

FREDERIC CHILD BIGGIN, *Professor*

The course offered by this Department is arranged to prepare students for handling with confidence the problems of structural designing and superintendence that come up in the modern architect's office, and to provide the measure of artistic training required to equip them for the successful practice of the profession of architectural engineering.

A strong foundation in English, mathematics, physics, mechanical and freehand drawing is laid during the Freshman and Sophomore years, and supplemented by practical work in the College Shops.

With the Junior year begins the study of Architectural Engineering, as distinguished from Mechanical, Electrical and Civil Engineering. Thorough instruction is given in building materials and construction, historical study of architectural styles and the Greek and Roman orders, applied mechanics, graphics, roof trusses, and the preparation of working drawings and details.

Advanced problems in shades, shadows and perspective, with pen and ink rendering, are also taken up in the Junior year.

The Senior year is devoted almost entirely to technical subjects, both theoretical and practical. Strength of materials, masonry, reinforced concrete and steel construction, and their application to fireproof buildings, are covered in a thorough manner. Much time is given to architectural design, heating and ventilating, specifications, estimates of cost and superintendence. A strong course is included in commercial law and its relation to contracts.

Each Senior student prepares for his thesis preliminary sketches and complete working plans of a steel or reinforced concrete, fireproof office or commercial building, including computations for structural work. Running through the entire Senior year is a seminar of professional subjects, in which, by lectures, selected courses of reading and discussions, matters of general interest are taken up and a correct attitude on professional ethics and practice developed.

All the equipment of The School of Engineering is used for instruction in architectural engineering. In the Shops students learn the principles of carpentry, and the properties of iron and steel castings. The Electrical Engineering laboratory affords practical instruction in wiring and lighting of buildings. In the Mechanical Engineering laboratory investigations are made on the heating and ventilating of buildings. The Civil Engineering testing laboratory is used for instruction in methods of testing and determining the strength of cements, mortars, brick, stone, steel and other building materials.

SUBJECTS

1. Building Materials and Construction.—Junior year, fall term; five hours theory per week. Required: A. E.

   Properties and uses of various woods; grading and inspection of lumber; methods of framing and joining; stonecutting and masonry; plastering; ornamental iron and sheet metal work; roofing; insulation and sound-deadening materials; tiling and mosaic; glazing; paints; hardware; elevators, etc.

2. HISTORY OF ARCHITECTURE.—Junior year, fall term; thr hours theory per week. Required: A. E. Prerequisit Ancient and Medieval History.

Egyptian, Greek, Roman and other important historical styles architecture; elementary forms of design and systems of constru tion. Typical examples of each style are studied in detail.

3. WORKING DRAWINGS.—Junior year, fall term; six hou practicum per week. Required: A. E.

Plans from offices of the best architects in the country are studie in detail, and practical application made of the principles an methods of drafting derived from these drawings and from book and plates in the architectural library.

4. LETTERING.—Junior year, fall term; two hours practicum pe week. Required: C. E., A. E.

Principles and practice of lettering for working drawings.

5. PLUMBING AND DRAINAGE.—Junior year, winter term; tw hours theory per week. Required: A. E.

Water supply to buildings and the removal of soil and waste; fil ters; traps; plumbing fixtures; ventilation, etc.

6. DETAILS OF BUILDING CONSTRUCTION.—Junior year, winte term; four hours practicum per week. Required: A. E

A continuation of the study of working drawings from architect' plans, books and plates in the architectural library and othe sources. Preparation of scale and full size details of windows doors, cornices, stairs, interior finish, etc.

7. ORDERS OF ARCHITECTURE.—Junior year, spring term; four hours practicum per week. Required: A. E.

Proportions, development and application to modern use of the orders of Greek and Roman architecture.

8. SHADES, SHADOWS AND PERSPECTIVE.—Junior year, spring term; four hours practicum per week. Required: A. E.

Advanced work in architectural perspective drawing, and the de lineation of shades and shadows.

9. PEN AND INK RENDERING.—Junior year, spring term; four hours practicum per week. Required: A. E.

Methods and practice of pen and ink rendering as applied to ar chitectural drawings.

10*a-b*. ARCHITECTURAL DESIGN.—Senior year, fall and winter terms; six hours practicum per week, fall term; ten hours practicum per week, winter term. Required: A. E.

A study of the principles of planning and design. Sketch plans, elevations and sections of stated problems are prepared and fol lowed by working drawings and details. During the winter term particular attention is given to problems involving steel and re inforced concrete fireproof construction.

11. STEEL CONSTRUCTION.—Senior year, winter term; three hours theory per week. Required: A. E.

Steel frame construction and its application to modern fireproof buildings; wall and column bearing systems; caisson and pile foundations; grillage, raft and cantilever construction; terra cotta, concrete and other systems of fireproofing; connections and anchorage of terra cotta, brick and stone facing to steel frame.

12. ESTIMATES OF COST.—Senior year, spring term; two hours theory per week. Required: C. E., A. E.

Practical problems in the various methods of estimating quantities and cost of materials; approximate estimates of cubic contents and floor areas, and detailed estimates of all materials and labor.

13. SUPERINTENDENCE.—Senior year, spring term; two hours theory per week. Required: A. E.

The duties and powers of the architect as superintendent. The obstacles with which he has to contend and the best methods of handling them. The importance and necessity of complete and properly prepared plans and specifications to effective superintendence.

14*a-b-c*. SEMINAR.—Senior year, fall, winter and spring terms; one hour theory per week. Required: A. E.

Lectures, selected readings and discussions on matters of value and interest not covered by the regular courses, and on professional ethics and practice.

15*b*. THESIS.—Senior year, spring term; eighteen hours practicum per week. Required: A. E.

The student prepares for his thesis preliminary sketches and complete working plans of a steel or reinforced concrete, fireproof or commercial building, including computations for structural work.

16*a*. HOUSE PLANNING.—Senior year, fall term; two hours theory and four hours practicum per week. Required: Dom. Sci. & Art.

A condensed course in building materials and construction, including plumbing, heating and ventilation, is followed by the preparation of sketch plans for a typical residence, and estimates of cost.

17*a-b*. DESCRIPTIVE GEOMETRY AND PERSPECTIVE.—Sophomore year, winter and spring terms; three hours theory and four hours practicum per week. Required: Engr. Prerequisites: Math. 2*c*, M. E. 6*a*.

Orthographic projection; lines, planes and surfaces; intersections and developments; isometric and oblique projections; elementary shades, shadows and perspective drawing.

18. ORNAMENT.—Senior year, fall term; two hours practicum per week. Required: A. E.

History and development of ornament, and its application to architectural design.

THE SCHOOL OF DOMESTIC SCIENCE AND ART

J. H. BOWERS, *Acting Dean*

The Departments of The School of Domestic Science and Art occupy nearly all the first floor of the Woman's Building. The space at command comprises a laboratory, kitchen, practice dining room, demonstration lecture and recitation room, two large sewing rooms and a studio, besides offices and two locker rooms.

The courses offered in The School of Domestic Science and Art are as follows:

1. A regular four years' course, leading to the degree of Bachelor of Science.

2. A course in connection with The School of Teachers Normal Training. This course is intended chiefly for those needing general knowledge of domestic science and art for use in connection with the teaching of common school branches, and occupies two hours of theory and four hours practicum each week during the year.

3. A twenty weeks' course in connection with the Short Course in Agriculture. Simple work is given in sewing and textiles, food preparation and selection, hygiene and sanitation, home nursing, house furnishing, etc. This course is adapted to the needs of those who wish to apply the knowledge gained to problems met in their own homes.

4. Certain elective studies are provided for advanced students working for a degree. Domestic Science, Physiology, Chemistry and Pedagogy are the prerequisites for this work.

The subjects in The School of Domestic Science and Art are taught by the following Departments:

1. The Department of Domestic Science.
2. The Department of Domestic Art.
3. The Department of Horticulture and Botany.
4. The Department of Electrical Engineering and Physics.

5. The Department of Architectural Engineering.
6. The Department of Zoology and Bacteriology.
7. The Department of Chemistry.
8. The Department of Entomology.
9. The Department of English and Public Speaking.
10. The Department of Mathematics.
11. The Department of Foreign Languages.
12. The Department of Drawing and Art Work.
13. The Department of History.
14. The Department of Pedagogy and Social Science.
15. The Department of Physical Training.

Outline of Courses in The School of Domestic Science and Art, Giving Subjects and Hours

The figures and letters following the departmental name signify the serial number of the subject, and indicate the first (a), second (b), or third (c) term's work in the same subject. The name in parenthesis is the specific name of the subject, and the figures in column at the right of the name indicate the number of hours per week the subject is taught; classroom hours without parenthesis, practicum hours in parenthesis. To graduate, a student must earn credits in all subjects outlined in the course.

FRESHMAN YEAR

FALL TERM		WINTER TERM		SPRING TERM	
English 1*a*	4	English 1*b*	4	English 1*c*	4
Mathematics 1*a* (Algebra)	5	Mathematics 1*b* (Algebra)	4	Mathematics 8*b* (Plane Geom.)	5
History 1*a* (American)	4	History 1*b* (Government)	4	Physics 1 (Elementary)	4 (2)
Drawing 1*a* (Elementary)	(4)	Mathematics 8*a* (Plane Geom.)	4	Botany 1*a* (Elementary)	3 (4)
Domestic Art 3*a* (Basketry)	(2)	Domestic Art 3*b* (Basketry)	(2)	Domestic Art 1*c* (Sewing)	(4)
Domestic Art 1*a* (Sewing)	(2)	Domestic Art 1*b* (Sewing)	(2)	Drawing 1*c* (Ele. Design)	(2)
Domestic Science 5 (Soc. Observances)	2	Pub. Speaking 1*b* (Expression)	(2)	Physical Training	
Public Speaking 1*a* (Expression)	(2)	Physical Training			
Physical Training					

SOPHOMORE YEAR

FALL TERM		WINTER TERM		SPRING TERM	
English 2*a*	4	English 2*b*	4	English 2*c*	4
German 1*a* (Begin. Course)	4	German 1*b* (Begin. Course)	4	German 1*c* (Begin. Course)	4
Chemistry 1*a* (Inorganic)	3 (4)	Chemistry 1*b* (Inorganic)	3 (4)	Chemistry 1*c* (Inorganic)	3 (4)
Drawing 2*a* (Composition)	1 (2)	Drawing 2*b* (Color Theory)	1 (2)	Drawing 2*c* (Applied Design)	1 (2)
Zoology 1 (General)	3 (4)	Dom. Science 2*a* (Food Work)	1 (4)	Dom. Science 2*b* (Food Work)	1 (4)
Domestic Art 2*a* (Millinery)	(2)	Domestic Art 2*b* (Millinery)	(2)	Domestic Art 2*c* (Millinery)	(2)
Domestic Art 11*a* (Model Sewing)	(2)	Domestic Art 11*b* (Model Sewing)	(2)	Domestic Art 5 (Hist. of Costumes)	1
Domestic Art 4*a* (Textiles)	1	Domestic Art 4*b* (Textiles)	1	Domestic Art 4*c* (Textiles)	1
Physical Training		Physical Training		Physical Training	

JUNIOR YEAR

FALL TERM

English 8*a*.....3 (Adv. Comp.)
Chemistry 2.....3 (4) (Adv. Inorganic)
Physiology 1.....3 (4) (Advanced)
Dom. Science 6*a*.....1 (4) (Food Work)
Domestic Art 6..... (2) (Drafting)
Pedagogy 10.....3 (Psychology)

WINTER TERM

English 8*b*.....3 (Adv. Comp.)
Chemistry 17.....3 (4) (Applied Org.)
Bacteriology 4.....2 (4) (Household)
Drawing 3*b*.....2 (2) (Applied Arts)
Dom. Science 6*b*....1 (2) (Food Work)
Domestic Art 7..... (2) (Cutting & Fitting)
Pedagogy 11.....3 (Hist. Education)

SPRING TERM

English 8*c*.....3 (Adv. Comp.)
Chemistry 16.....3 (4 (Foods & Sanitation)
Bacteriology 5.....2 (4 (Household)
Drawing 3*c*.....1 (2 (Applied Arts)
Dom. Science 6*c*.....1 (2) (Food Work)
Domestic Art 8..... (4) (Dressmaking)
Entomology 2.....1 (2) (Household)
Pedagogy 12.....3 (Meth. & Man.)

SENIOR YEAR

FALL TERM

English 3 or 9*a*.....5 (Shakespeare; Engl. Lit.)
or
*Pedagogy 4.....3 (4) (Theory & Prac.)
and
*Pedagogy 7.....2 (H. S. Teaching)
or
Chemistry 8*a*.....3 (4) (Adv. Organic)
Dom. Science 19*a*.....1 (2) (Dietetics)
Dom. Science 12*a*.....2 (2) (Teach Dom. Sci.)
Dom. Science 14*a*.....2 (4) (Adv. Cooking)
Domestic Art 12*a*.....1 (Theory of Sew.)
Arch. Eng. 16*a*.....2 (4) (House Planning)
Domestic Art 13..... (2) (Tailoring)

WINTER TERM

English 6 or 9*b*.....5 (Tennyson; Engl. Lit.)
or
*Pedagogy 5 & 8....5 (Philosophy Edu. School Adm.)
or
Chemistry 8*b*.....3 (4) (Adv. Organic)
Dom. Science 19*b*..1 (2) (Dietetics)
Dom. Science 12*b*..2 (2) (Teaching)
Dom. Science 14*b*..2 (4) (Adv. Cooking)
Domestic Art 12*b*..1 (Theory of Sew.)
Domestic Art 15....2 (4) (House Decoration)
Domestic Art 9..... (2) (Adv. Hand Work)

SPRING TERM

English 7 or 9*c*.....5 (Carlyle & Ruskin; Engl. Lit.)
or
*Pedagogy 6 & 9.....5 (Edu. Psychology School Super.)
or
Chemistry 18.....3 (4) (Physiological)
Dom. Science 19*c*.....1 (2) (Dietetics)
Dom. Science 12*c*.....2 (2) (Teaching)
Dom. Science 14*c*.....2 (4) (Adv. Cooking)
Domestic Art 12*c*.....1 (Theory of Sew.)
Dom. Science 21.....4 (House Furnishing & Management)
Domestic Art 14..... (2) (Adv. Dressmak.)
Domestic Art 10*a*..... (4) (Fine Needlework)

Department of Domestic Science

ELIZABETH FULTON, *Professor*
EDITH COFFMAN, *Assistant*

Since the Department has been moved to the new laboratories it contains a more extensive and up-to-date equipment. New illustrative material has been added and the new practice dining room is well equipped for work for the coming year.

Special attention will be given to more efficient methods of housekeeping and homemaking.

In the College library there are many valuable books of refer

*Graduates from The School of Domestic Science and Art who shall have elected all the pedagogical work offered and shall have earned credits in agriculture, music and Oklahoma history will thus have satisfied the legal requirements for a State life certificate.

ence on Home Economics, Domestic Science and Art, and allied subjects. The Department of Domestic Science receives regularly a number of the best household magazines. The Government bulletins and other publications of interest are used in the departmental reading room.

The course is planned with special reference to the training of teachers as well as for the general culture of the homemaker and the housekeeper.

SUBJECTS

2a-b. Food Work.—Sophomore year, winter and spring terms; one hour theory and four hours practicum per week. Required: Dom. Sci. & Art. Elective: Sci. & Lit., Normal. Prerequisites: Physics 1, Bot. 1*a*, Chem. 1*a*. Chem 1*b* and 1*c* must be taken simultaneously with Dom. Sci. 2*a* and 2*b*.

This subject includes a study of the history and manufacture of foods, processes used in cooking, classification, principles of cookery, chemical composition of foods. The digestibility, nutritive value, economic value, and the use of food are considered. Lectures, recitations, demonstrations and theme work are included in the theory. The selection, preparation, judging, and the serving of typical foods is a part of the work of each practicum.

5. Social Observances.—Freshman year, fall term; two hours theory per week. Required: Dom. Sci. & Art. Elective: Sci. & Lit. (Sophomore), Normal (Sophomore).

The lectures and discussions consider the usages of good society, including manners, conversation, forms of address, introductions, entertainments, calls, etc. Lectures, discussions, collateral readings and demonstrations are given.

6a-b-c. Food Work.—Junior year, fall, winter and spring terms; fall term, one hour theory and four hours practicum per week; winter and spring terms, one hour theory and two hours practicum per week. Required: Dom. Sci. & Art. (Chem. 2, 16 and 17 must be taken simultaneously), Normal. Prerequisites: Dom. Sci. 2*a*, 2*b*.

This course comprises more advanced work in the selection, preparation and serving of foods. Special attention is given to economic methods of preparation, and to the planning of meals, the setting of the table, and the serving of simple meals. Lectures, recitations and theme work are included in this course.

12*a-b-c.* Teaching Domestic Science.—Senior year, fall, winter and spring terms; two hours theory and two hours practicum per week. Required: Dom. Sci. & Art. Elective: Normal. Prerequisites: Dom. Sci. 6*a-b-c*.

This course gives practice in the actual teaching of Home Economics. The students take turns, under the direction of the head

of the Department, in conducting classes in the laboratory. The course includes a study of the equipment of domestic science departments, the furnishings and fittings of lecture rooms, store rooms, laboratories, including utensils and all supplies necessary in the teaching of the various subjects of Home Economics.

14*a-b-c*. ADVANCED COOKING.—Senior year, fall, winter and spring terms; two hours theory and four hours practicum per week. Required: Dom. Sci. & Art. Prerequisites: Dom. Sci. 6*a*, 6*b*, 6*c*.

This course includes, (a) the study of special problems in the selection, preparation and serving of foods; (b) in preparing and delivering addresses, and doing practical work in food preparation before an audience consisting of other members of the class and invited guests; and (c) in individual work preparing and serving economical meals to invited guests and members of the class. Spring term, invalid cookery. Lectures, recitations, themes and collateral readings are required.

19*a-b-c*. DIETETICS.—Senior year, fall, winter and spring terms; one hour theory and two hours practicum per week. Required: Dom. Sci. & Art. Prerequisites: Dom. Sci. 6*a*, 6*b*, 6*c*, Physiology 1, Bact. 4, 5.

This course comprises the study of dietary standards, the calculation of food values, the diet for various ages, and the various systems of diet for normal and abnormal conditions. The most important principles of home nursing are included in this course. The use of gram scales and the computing of the caloric value of foods, recipes, and whole meals form a part of the work of the course.

21. HOUSE FURNISHING AND HOUSEHOLD MANAGEMENT.—Senior year, spring term; four hours theory per week. Required: Dom. Sci. & Art. Prerequisites: Dom. Art 15, A. E. 16*a*.

This course is a continuation of the course in house decoration. It comprises the study of the history and development of various types of furniture and the selection of modern styles of furniture suitable to the various types of houses. The latter part of the course includes the study of scientific and systematic care and management of the modern home.

22*a-b-c*. FOOD AND ITS PREPARATION.—Fall, winter and spring terms; two hours theory and four hours practicum per week. Elective except to Dom. Sci. & Art students.

This course gives practice in the selection, preparation and serving of foods with a study of the history, growth and manufacture of foodstuffs. In the spring term attention is given to the planning and serving of economical meals. Lectures, recitations and collateral readings are included.

Department of Domestic Art

Margaret M. Evans, *Professor*
Susie Cage, *Assistant*

This Department occupies the east wing of the first floor of the new Woman's Building, and includes two well equipped sewing rooms, a fitting room, exhibition room and lockers. The equipment of the classrooms consists of one large cutting table, sewing tables, sixteen sewing machines of different makes, large mirror, dress forms for use in dress fitting, an electric iron for pressing, an electric heating plate for use in millinery class, drafting charts, a loom, and illustrative material, such as cotton, silk and flax fibers, and many others from all over the world; a sequence of the manufacture of needles, shears, sewing cotton, sewing silk, and linen thread for use in the study of textiles.

This Department aims to meet the needs of two classes of students, viz: First, students in the regular courses of the College who desire a knowledge of general principles and facts of household art and sewing, as a preparation for home life. Second, students who desire to specialize with a view to becoming teachers of domestic art.

Every effort is made to give each student the opportunity to develop both latent and evident capacities, thus enabling the choice of an occupation that will return to the worker and to society the largest measure of satisfaction and benefit.

In this College emphasis is laid upon the artistic and practical side of technical work; therefore design and utility are made equal to excellence of technique. A regular alternative is maintained in the routine of classes between instruction that insists on mechanical accuracy and instruction that encourages freedom of line, form and color of expression.

The courses in sewing have a two-fold purpose, the first being to present a systematic, well developed course of instruction that shall develop skill on the part of the student. The second purpose is professional, being to give a content from which courses of study may be organized and show the development of the subject matter, its teaching possibilities, methods of presentation and class management. The complete course includes model sewing, plain sewing, dressmaking and art needlework.

SUBJECTS

1*a-b-c*. MODEL SEWING.—Freshman year, fall, winter and spring terms; fall and winter terms, two hours practicum per week; spring term, four hours practicum per week. Required: Dom. Sci. & Art, Sci. & Lit. (women), Normal (women).

Fall: A course in making models of the stitches to be used in plain sewing and their application to seams, aprons, towels, etc. Winter: The drafting of patterns for simple underwear and making of plain garments in underwear. Spring: Practice in machine sewing, use of attachments and making of either a white petticoat or princess slip and nightgown.

2*a-b-c*. MILLINERY.—Sophomore year, fall, winter and spring terms; two hours practicum per week. Required: Dom. Sci. & Art.

Fall: Model work of the various finishes for brims, facings, folds, shirrings, lining, etc.; drafting of patterns for shapes to be made up in buckram, and covering and trimming of a model winter hat. Winter: Spring millinery, a study of styles, discussion of materials, remodeling of old hats, wire frame making, covering, sewing straw, and finishing spring hats. Spring: Making and trimming of summer hats.

3*a-b*. BASKETRY.—Freshman year, fall and winter terms; two hours practicum per week. Required: Dom. Sci. & Art.

Fall: Instruction in simple cord and raffia work, including sewed baskets, over soft coil and reed coil. Designs adapted to the form are studied and applied. Winter: Reed baskets are woven, and the course includes other simple problems in basketry which can be applied in grade teaching.

4*a-b-c*. TEXTILES.—Sophomore year, fall, winter and spring terms; one hour theory per week. Required: Dom. Sci. & Art.

The purpose of this course is to give a practical understanding of the various animal and vegetable fibers and processes of their preparation for manufacture; their value in the commercial world; their utility and value for textile fabrics. This course leads to training in good judgment and taste in selection of proper and suitable wearing apparel. It includes the study of the art of weaving, development of spinning, and modern processes of manufacturing, its economic value and the effect upon social conditions; also testing of various fabrics with certain chemicals and under microscope.

5. HISTORY OF COSTUME.—Sophomore year, spring term; one hour theory per week. Required: Dom. Sci. & Art.

This course offers a study of the history of costumes, covering dress of the primitive people and of early medieval and modern ages; of the folk costumes of various countries, including strange customs in which dress forms an important part. It takes up the hygienic side of costumes of modern days, pointing out harmful as well as useful features of present styles.

6. Drafting—Junior year, fall term; two hours practicum per week. Required: Dom. Sci. & Art. Elective: Normal.

Drafting flat paper patterns to individual measurements. Charts are the property of the College.

7. Cutting and Fitting.—Junior year, winter term; two hours practicum per week. Required: Dom. Sci. & Art. Elective: Normal.

This includes the application of certain of the patterns of the previous term, and the making of a fitted cambric pattern, and making shirtwaist. Tailored waist designed and cut to individual measurements; particular attention is given to sleeve, placket, cuff, collar and finishing.

8. Dressmaking.—Junior year, spring term; four hours practicum per week. Required: Dom. Sci. & Art. Elective: Normal.

A tailored skirt is made. Special attention is given to shrinking of material, finishing seams, placket, etc. Summer dresses of batiste, lawn, dimity or other thin materials made in prevailing practical styles suitable to the wearer.

9. Advanced Handwork.—Senior year, winter term; two hours practicum per week. Required: Dom. Sci. & Art.

Art needlework is taught, including simple stitches in embroidery, and its application to doilies, towels, centerpieces and embroidered underwear.

10*a*. Fine Needlework.—Senior year, spring term; four hours practicum per week. Required: Dom. Sci. & Art.

Includes the making of fine French lingerie.

11*a-b*. Model Sewing.—Sophomore year, fall and winter terms; two hours practicum per week. Required: Dom. Sci. & Art.

Fall: This course is to give the girls who intend teaching sewing a theoretical and practical understanding of the subject, introducing sewing models and methods of teaching. Winter: Includes simple crocheting stitches and their application.

12*a-b-c*. Theory of Sewing.—Senior year, fall, winter and spring terms; one hour theory per week. Required: Dom. Sci. & Art.

Fall: Lectures on methods of teaching, and planning lessons, or series of lessons, in Domestic Art. Winter: Practice teaching. Spring: A continuation of work of previous terms.

13. Tailoring.—Senior year, fall term; two hours practicum per week. Required: Dom. Sci. & Art.

A tailored coat, either long or short, will be made during the term. The purpose of the course is to give a better understanding of processes involved in making a coat, putting in pockets, etc.

14. ADVANCED DRESSMAKING.—Senior year, spring term; two hours practicum per week. Required: Dom. Sci. & Art.

This includes the making of an evening dress. Dress forms will be used so that each girl may do her own fitting, draping, etc.

15. HOUSE DECORATION.—Senior year, winter term; two hours theory and four hours practicum per week. Required: Dom. Sci. & Art. Prerequisite: A. E. 16*a*.

This course includes the study of color, line, spacing and proportion as applied to various types of rooms. The practice work includes the working out of color schemes (by use of water colors) for walls, hangings and floor coverings for rooms of house planned in A. E. 16a, fall term.

THE SCHOOL OF SCIENCE AND LITERATURE

L. L. LEWIS, *Dean*

Departments of instruction in The School of Science and Literature are:

1. Department of Zoology and Bacteriology.
2. The Department of Chemistry.
3. The Department of Entomology.
4. The Department of English and Public Speaking.
5. The Department of Mathematics.
6. The Department of Foreign Languages.
7. The Department of Drawing and Art Work.
8. The Department of History.
9. The Department of Agronomy.
10. The Department of Horticulture and Botany.
11. The Department of Electrical Engineering and Physics.
12. The Department of Domestic Science.
13. The Department of Domestic Art.
14. The Department of Pedagogy and Social Science.
15. The Department of Political Economy and Marketing.
16. The Department of Music.
17. The Department of Physical Training.

The courses in The School of Science and Literature offer a sound basis for scientific training in mathematical, physical and biological sciences. It is also believed that one's education should include a study of some of the subjects such as history and social science, which tend to a better understanding of one's duties as a citizen, and gives a broad, liberal view of the relations of the individual to society.

The course requires the student to take such subjects as are fundamental, as these same subjects form the basis of all of the courses given in the institution. Where other courses offer vocational subjects, the science and literature course offers, by means of groups of electives, opportunities for further work in languages and in the sciences. Such opportunities meet the needs of stu-

dents desiring a liberal education as a foundation for such professional courses as law or medicine, or who are preparing themselves particularly for work requiring thorough training in one or more of the sciences, or who have not fully decided on their vocation but desire to secure training that is well balanced in respect to literature, modern science and cultural subjects.

Elective System

It will be noted from the course that follows that certain electives are begun in the Sophomore year; that approximately one-half of the time of the Junior and Senior years must be devoted to a language and a science, and that the remainder of the work may be selected from the various groups of studies indicated as electives. This arrangement will give continuous work in a language and a major science while it offers opportunities for electing minor subjects more or less closely related to those selected as majors.

Relations to Other Schools

Besides the instruction given to students in The School of Science and Literature, the instructional force gives much of the collateral work offered in other Schools. Among the courses offered to students of The School of Science and Literature are many from Departments of other Schools in the College.

Equipment

The various Departments of The School of Science and Literature are well equipped for the work offered. The laboratories for scientific work are especially well equipped with such instruments and other apparatus needed for this work. For further information regarding equipment, see announcements of the various Departments following the outline of the course of study.

Outline of Courses in The School of Science and Literature Giving Subjects and Hours

The figures and letters following the departmental name signify the serial number of the subject, and indicate the first (a), second (b), or third (c) term's work in the same subject. The name in parenthesis is the specific name of the subject, and the figures in column at the right of the name indicate the number of hours per week the subject is taught; classroom hours without parenthesis, practicum hours in parenthesis. The practicum period is two hours in length, and is equivalent to one hour classroom work in estimating number of hours per week to be taken. To graduate, a student must earn credits in sixty term-hours in each year. By "term-hours" is meant one hour of recitation or two hours of practicum per week, carried throughout one term. A student who carries more than the required Sophomore work will be allowed to apply the excess credit to the following year, but the maximum number of hours which may be so applied is five. In each college term a student must take at least eighteen hours and not more than twenty-three hours, except by special permission. Junior electives are open to Seniors and Senior electives are open to Juniors, upon approval of adviser and head of department concerned. Military science and drill are required of all male students in the course.

FRESHMAN YEAR

FALL TERM	WINTER TERM	SPRING TERM
English 1*a*.....4	English 1*b*.....4	English 1*c*.....4
Mathematics 1*a*.....5 (Algebra)	Mathematics 1*b*.....4 (Algebra)	Mathematics 2*c*.....5 (Solid Geom.)
Mathematics 2*a*.....4 (Plane Geom.)	Mathematics 2*b*.....5 (Plane Geom.)	Mathematics 1*c*.....4 (Algebra)
History 1*a*.....4 (American)	History 1*b*.....4 (Government)	or
Public Speaking 1*a*.. (2) (Expression)	Pub. Speaking 1*b*.. (2) (Expression)	Botany 1*a*.....3 (4) (Elementary)
Domestic Art 1*a*..... (2) (Women) (Sewing)	Domestic Art 1*b*.... (2) (Women) (Sewing)	Physics 1.....4 (2) (Elementary)
Drawing 1*a*..... (4) (Elementary)	Drawing 1*b*..... (4) (Women) (Object)	Pub. Speaking 1*c*.. ....(2) (Expression)
Physical Training	Physical Training	Domestic Art 1*c*..... (4) (Women) (Sewing)
		Physical Training

SOPHOMORE YEAR

FALL TERM	WINTER TERM	SPRING TERM
English 2*a*.....4	English 2*b*.....4	English 2*c*.....4
Chemistry 1*a*.....3 (4) (Inorganic)	Chemistry 1*b*.....3 (4) (Inorganic)	Chemistry 1*c*.....3 (4) (Inorganic)
German 1*a*.....4 (Begin. Course)	German 1*b*.....4 (Begin. Course)	German 1*c*.....4 (Begin. Course)
Zoology 1.....3 (4) (General)	History 2*a*.....5 (English)	History 2*b*.....4 (English)
Physical Training (Women)	Physical Training (Women)	Physical Training (Women)

SOPHOMORE ELECTIVES

FALL TERM	WINTER TERM	SPRING TERM
Mathematics 3.....5 (Trigonometry)	Mathematics 4*a*.....3 (Analytics)	Mathematics 4*b*.....3 (Analytics)
History 1*c*.....4 (Modern)	Agronomy 10.....5 (Geology)	Mathematics 5.....4 (Astronomy)
Latin *a*.....5 (Begin. Course)	Latin *b*.....5 (Begin. Course)	Latin *c*.....5 (Begin. Course)
Botany 1*b*.....2 (4) (Elementary)	Zoology 5.....3 (4) (Comp. Anat.)	Zoology 6.....3 (4) (Systematic)
Political Economy & Marketing 2.....4 (Elements of Economics)	Dom. Science 2*a*....1 (4) (Food Work)	Dom. Science 2*b*.....1 (4) (Food Work)
Dom. Science 5.....2 (Soc. Observ.)	Music 1 (2)	Music 1 (2)
Music 1 (2)		

In the Junior and Senior years students must designate a major science and a language, to be carried continuously during the two years. Twenty to twenty-five per cent of the work is to be elected from one of the six groups of electives given below, the remainder of the work may be taken from the group of free electives or from any other electives offered in the Junior and Senior years.

JUNIOR YEAR

FALL TERM	WINTER TERM	SPRING TERM
A Major Science and One Language	A Major Science and One Language	A Major Science and One Language

(The above work is required and shall represent continuous work in a language and some science designated as a major science. Mathematics may be elected as a science, and Sophomore mathematics may be taken as a Junior elective.)

JUNIOR ELECTIVES

Group I—Biological Sciences

FALL TERM	WINTER TERM	SPRING TERM
Botany 2.....3 (4) (Plant Physiology)	Botany 3.....2 (4) (Plant Phys.)	Botany 4.....2 (4) (Plant Mycol. & Pathology)
Physiology 1.....3 (4) (Advanced)	Zoology 2.....3 (4) (Histology)	Zoology 3.....3 (4) (Gen. Biology)
		Entomology 2.....1 (2) (Household)
		Chemistry 16.....3 (4) (Elementary)

Group II—History and Social Science

FALL TERM	WINTER TERM	SPRING TERM
Political Economy & Marketing 3.....3 (Municipal Problems)	Political Economy & Marketing 5....4 (Legislation)	Political Economy & Marketing 7.....4 (Rural Problems)
		History 3.....4 (Amer. Consti. Hist.)

Group III—English Language

FALL TERM	WINTER TERM	SPRING TERM
English 8*a*.....3 (Adv. Comp.)	English 8*b*.....3 (Adv. Comp.)	English 8*c*.....3 (Adv. Comp.)
English 9*a*.....5 (Eng. Lit.)	English 9*b*.....5 (Eng. Lit.)	English 9*c*.....5 (Eng. Lit.)

Group IV—Foreign Languages

FALL TERM	WINTER TERM	SPRING TERM
German 2*a*.....5 (Adv. Reading)	German 2*b*.....5 (Adv. Reading)	German 2*c*.....5 (Adv. Reading)
Latin 1*a*.....5 (Caesar)	Latin 1*b*.....5 (Caesar)	Latin 1*c*.....5 (Caesar)
French 1*a*.....4 (Begin. Course)	French 1*b*.....4 (Begin. Course)	French 1*c*.....4 (Begin. Course)
Spanish 1*a*.....4 (Begin. Course)	Spanish 1*b*.....4 (Begin. Course)	Spanish 1*c*.....4 (Begin. Course)

Group V—Physical Sciences

FALL TERM	WINTER TERM	SPRING TERM
Physics 4.....3 (2) (Heat & Mechanics)	Physics 3.....3 (2) (Sound & Light)	Physics 2.....3 (2) (Electricity & Magnetism)
Chemistry 2.....3 (4) (Adv. Inorganic)	Chemistry 17.....3 (4) (Applied Org.)	Chemistry 14.....3 (4) (Analytical)
		Entomology 1.....3 (4) (Foods & Sanitation)

Group VI—Mathematics

FALL TERM	WINTER TERM	SPRING TERM
Mathematics 6*a*.....4 (Calculus)	Mathematics 6*b*.....4 (Calculus)	Mathematics 6*c*.....4 (Calculus)

Group VII—Free Electives

FALL TERM	WINTER TERM	SPRING TERM
Pedagogy 1.....5 (Psychology)	Pedagogy 2.....5 (Hist. of Education)	Pub. Speaking 4.....1 (2) (Public Address)
Pub. Speaking 2.....1 (2) (Adv. Expression)	Pub. Speaking 3....1 (2) (Debating)	Music 1 (2)
Music 1 (2)	Music 1 (2)	

SENIOR YEAR

FALL TERM	WINTER TERM	SPRING TERM
A Major Science and One Language	A Major Science and One Language	A Major Science and One Language

SENIOR ELECTIVES

Group I—Biological Sciences

FALL TERM	WINTER TERM	SPRING TERM
Bacteriology 1.....3 (4) (General)	Bacteriology 2.....2 (4) (Agricultural)	Bacteriology 3.....2 (4) (Technical)
Botany 6.....3 (4) (Spec. Systematic)	Botany 8.....3 (4) (Morphology)	Botany 9.....3 (4) (Gen. Morphology)
Entomology 3.....3 (4) (Economic)	Entomology 4.....2 (4) (Biological)	Entomology 5.....3 (4) (Scientific)
	Zoology 4.....2 (4) (Embryology)	Horticulture 3.....2 (2) (Forestry)

Group II—History and Social Science

FALL TERM	WINTER TERM	SPRING TERM
Social Science 5.....4 (Prin. of Sociol.)	Social Sci. 6.....4 (American Citizenship)	Social Sci. 8.....4 (Government)

Group III—English Language

FALL TERM	WINTER TERM	SPRING TERM
English 3.....5 (Shakespeare)	English 6.....5 (Tennyson)	English 7.....5 (Carlyle & Ruskin)

Group IV—Foreign Languages

FALL TERM	WINTER TERM	SPRING TERM
German 3*a*.....5 (Masterpieces)	German 3*b*.....5 (Masterpieces)	German 3*c*.....5 (Masterpieces)
Latin 2*a*.....5 (Cicero)	Latin 2*b*.....5 (Cicero)	Latin 2*c*.....5 (Virgil)
French 2*a*.....5 (Adv. Course)	French 2*b*.....5 (Adv. Course)	French 2*c*.....5 (Adv. Course)
Spanish 2*a*.....5 (Adv. Course)	Spanish 2*b*.....5 (Adv. Course)	Spanish 2*c*.....5 (Adv. Course)

Group V—Physical Sciences

FALL TERM	WINTER TERM	SPRING TERM
Chemistry 8*a*.....3 (4) (Adv. Organic)	Chemistry 8*b*.....3 (4) (Adv. Organic)	Chemistry 5.....2 (6) (Industrial) or Chemistry 18.....3 (4) (Physiological)
Chemistry 15.....3 (4) (Physical)		

Group VI—Mathematics

FALL TERM	WINTER TERM	SPRING TERM
Mathematics 7.....3 (Dif. Equa.)		

Group VII—Free Electives

FALL TERM	WINTER TERM	SPRING TERM
Music 1 (2)	Music 1 (2)	Music 1 (2)
		Pedagogy 6.....3 (Psychology)

Department of Zoology and Bacteriology

L. L. LEWIS, *Professor*
C. H. MCELROY, *Assistant*
L. B. RITTER, *Assistant*
W. P. SHULER, *Assistant*
R. O. WHITTENTON, *Assistant*

The Department of Zoology and Bacteriology occupies quarters in the Library Building. The equipment consists of thirty Zeiss and Leitz microscopes with oil immersion lenses, microtomes, dissecting instruments and cameras. The Department is also well supplied with dissectable models of various animals, including an Azoux model of the horse, skeletons and charts for lecture room work. A good working collection of museum speciments is at hand for work in zoology, etc. For the work in physiology there are skeletons of the human body, manikins, charts, models, etc. The following work is offered by the Department in the regular College courses:

SUBJECTS

ZOOLOGY

1. GENERAL ZOOLOGY.—Sophomore year, fall and winter terms; three hours theory and four hours practicum per week. Required: Sci. & Lit. (fall), Dom. Sci. & Art (fall), Normal (fall), Agr. (winter), Com. & Mark. (winter), Vet. Med. (winter).

   The instruction given covers the general principles of the science and serves as an introduction to more advanced work in biology.

2. HISTOLOGY.—Junior year, winter term; three hours theory and four hours practicum per week. Elective: Sci. & Lit., Normal.

   This course includes a study of the tissues of the animal body and their development as related to embryology. Special attention is given to the laboratory course in order to develop necessary technique in staining and mounting tissues for examination.

3. GENERAL BIOLOGY.—Junior year, spring term; three hours theory and four hours practicum per week. Elective: Sci. & Lit., Normal. Prerequisite: Zoology 1.

   A general study of the problems of organic evolution, heredity, variation, etc. A brief review will be made of the work of the men most prominently connected with the development of biologic sciences.

4. EMBRYOLOGY.—Junior or Senior year, winter term; two hours theory and four hours practicum per week. Elective: An.

Husb., Agron., Dairy., Hort., Sci. & Lit. (Senior), Normal (Senior).

A study of the development of vertebrates, using the chick as laboratory material. The best laboratory technique is followed in making serial sections and in reconstruction work.

5. COMPARATIVE ANATOMY.—Sophomore year, winter term; three hours theory and four hours practicum per week. Elective: Sci. & Lit., Normal. Prerequisite: Zoology 1.

The work outlined in Wiederscheim's Comparative Anatomy is used as the basis for the course.

6. SYSTEMATIC ZOOLOGY.—Sophomore year, spring term; three hours theory and four hours practicum per week. Elective: Sci. & Lit., Normal. Prerequisite: Zoology 1.

This course follows the more general work in zoology and will take up the systematic grouping of animals in phyla, classes, etc. Special attention will be given to a study of mammals and birds.

7a-b. HISTOLOGY.—Sophomore year, winter and spring terms; winter term, three hours theory and four hours practicum per week; spring term, two hours theory and six hours practicum per week. Required: Vet. Med.

Special attention will be given to the necessary technique in this course.

8. EMBRYOLOGY.—Sophomore year, spring term; two hours theory and four hours practicum per week. Required: Vet. Med.

The course in embryology follows closely the work in histology, treating of the origin of tissues, organs and their development. Embryology of the chick and pig will be studied.

BACTERIOLOGY

1. GENERAL BACTERIOLOGY.—Senior year, fall term; three hours theory and four hours practicum per week. Required: An. Husb., Agron., Dairy., Hort., Vet. Med. (Junior). Elective: Sci. & Lit., Normal.

This course covers the general principles of the science and enables the student to comprehend the importance of bacteria as related to disease, their economy in nature, and relation to the various industries. This work is prerequisite to any work in bacteriology during the winter and spring terms.

2. AGRICULTURAL BACTERIOLOGY.—Senior year, winter term; two hours theory and four hours practicum per week. Required: Agron. Elective: An. Husb., Dairy., Hort., Sci. & Lit., Normal. Prerequisite: Bact. 1.

This work includes studies of the relation of bacteria to agriculture and to many of the industrial processes. A brief study is made of the action and properties of enzymes.

3. TECHNICAL BACTERIOLOGY.—Senior year, spring term; two hours theory and four hours practicum per week. Required (Junior): Vet. Med. Elective: An. Husb., Agron., Dairy., Hort., Sci. & Lit., Normal. Prerequisite: Bact. 1.

This course is open to students desiring to familiarize themselves with particular problems in the subject. Individual preference of the student will be given consideration in outlining the work.

4. HOUSEHOLD BACTERIOLOGY.—Junior year, winter term; two hours theory and four hours practicum per week. Required: Dom. Sci. & Art.

Introductory course to bacteriology, and will include such work as sterilizing, cultivation and physiology of bacteria, yeasts, etc.

5. HOUSEHOLD BACTERIOLOGY.—Junior year, spring term; two hours theory and four hours practicum per week. Required: Dom. Sci. & Art.

A continuation of the winter term's work. After acquiring sufficient laboratory experience the student will take up work in water and food analysis and studies of some of the common pathogenic bacteria.

PHYSIOLOGY

1. ADVANCED PHYSIOLOGY.—Junior year, fall term; three hours theory and four hours practicum per week. Required: Agr., Dom. Sci. & Art, Vet. Med. Elective: Sci. & Lit., Normal. Prerequisites: Sub-Freshman Physiology, Chem. 1*a*, 1*b*, 1*c*.

Particular attention is given to the physiology of nutrition. Laboratory work will include microscopic examinations of body fluids, digestion experiments, etc.

Department of Chemistry

HARDEE CHAMBLISS, *Professor*
H. M. POTTER, *Assistant Professor*
RALPH MCBURNEY, *Assistant*
V. T. JACKSON, *Assistant*

The Chemistry course as a whole is designed to give the student considerable familiarity with carefully selected chemical facts, and upon these facts as a basis to build up his conceptions of the principles, theories and laws which underlie the chemical science of today. That he may better appreciate the value of the subject to mankind in the past and present, some attention is paid to the history of the subject and to the modern applications in the arts and manufactures. That he may be able to read current

chemical literature intelligently and thereby "keep up with the times", the most modern theories are presented in simple form.

Furthermore, as nearly every practical chemist begins as an analyst, and many make analysis their life work, great stress is laid in analytical training. The science of quantitative analysis is taken up along with a thorough drill in the practical side of quantitative work. It is the policy of the Department to have its graduates well drilled in the scientific side of analytical chemistry, both qualitative and quantitative, and the operations involved in the actual analysis of a variety of substances are carefully supervised by the instructors.

This Department is located in the Chemistry Building, which consists of two stories, basement and attic. One of the large, bright rooms on the first floor is fitted up for lectures and recitations. There is a lecture table conveniently equipped and arranged for demonstration and observation. The supply of apparatus and chemicals is quite extensive, and the student's interest in the subject is first aroused, then encouraged and stimulated. The lecture room has a seating capacity of over one hundred. The remainder of the first floor is taken up with laboratories and balance rooms for quantitative work.

On the second floor there are three laboratories for introductory work (Course 1*a-b-c*). Each of these will accommodate twenty-four students at a time, and a central storeroom opens into all three. During the laboratory period there is an instructor in each laboratory and an advanced student in the storeroom. This arrangement has proved very efficient for laboratory instruction. All desks are so equipped with bottles or reagents and with apparatus as to minimize the loss of time incident to a student leaving his desk for these articles; and even in the case of more expensive instruments, materials and models for advanced students, every effort is made to keep on hand a supply that will meet all reasonable demands and prevent the serious loss of time and enthusiasm on the part of the student.

In the attic there are the general storerooms for apparatus and chemicals. These communicate with and supply the special storerooms and laboratories below by means of an elevator.

The building is heated by steam, and the gas for light and experimental use comes from a Tirrill equalizing gas machine in the

basement. The basement of the building contains a storeroom, a classroom and one large laboratory.

In general it may be said that it is the policy of the Department to maintain at all times those conditions which promote orderly and serious work, and which cultivate a pleasurable interest in scientific experimentation.

The courses offered by the Department may be divided into four classes:

1. The General Elementary Course taken by all Sophomores.

2. The Second-Year Chemistry required of students of Agriculture in the Junior year.

3. The Second-Year Chemistry required of students of Domestic Science and Art in the Junior year.

4. Courses for those who elect Chemistry during the Junior and Senior years with a view to becoming analysts, research assistants, Government assistants or teachers of chemistry.

SUBJECTS

1*a-b-c*. ELEMENTARY INORGANIC CHEMISTRY.—Sophomore year, fall, winter and spring terms; three hours theory and four hours practicum per week. Required: Agr., Engr. (1*a*, 1*b*), Dom. Sci. & Art, Sci. & Lit., Normal, Vet. Med., Com. & Mark. (1*a*, 1*b*). Prerequisites: Arith., Sub-Freshman Algebra, Algebra 1*a*, 1*b*, 1*c*, Physics 1, Chem. 1*a*, 1*b*, 1*c*.

This is the beginners' course and constitutes the foundation of all subsequent work in chemistry. It is designed to cultivate the student's powers of manipulation, observation and logical reasoning. The established facts of chemical science and their relation to the more important chemical industries and to everyday life, and the relation between these facts and the laws and theories of modern chemistry are presented in simple form.

2. ADVANCED INORGANIC CHEMISTRY.—Junior year, fall term; three hours theory and four hours practicum per week. Required: Agr., Dom. Sci. & Art. Elective: Sci. & Lit., Normal. Prerequisites: Chem. 1*a*, 1*b*, 1*c*.

The object of this course is to broaden and deepen the foundation laid in the Sophomore course (1a-b-c). All of the fundamental facts, principles, laws and theories are reviewed and amplified. Chemical arithmetic and structural formulae are taken up, the former as a drill in principles and the latter as a preparation for the study of organic chemistry. In the laboratory a systematic course in qualitative analysis is given.

5. INDUSTRIAL CHEMISTRY.—Senior year, spring term; two hours theory and six hours practicum per week. A choice between this course and Chemistry 12 is allowed. Both cannot be elected by the same student. Elective and Optional (Chem. 18): Sci. & Lit., Normal. Prerequisites: Chem. 1*a*, 1*b*, 1*c*, 2, 17, 8*a*, 8*b*, 14 or 16.

The purpose of this course is to give in some detail the description of a few of the more important processes for manufacturing inorganic chemical products. Some familiarity with patent literature in general will be features of this course. The laboratory work accompanying will consist chiefly of advanced quantitative analysis.

8*a-b*. ORGANIC CHEMISTRY.—Senior year, fall and winter terms; three hours theory and four hours practicum per week. Optional (8*a*—with Pedagogy 4 and 7, or Engr. 3, or Engr. 9*a*; 8*b*—with Pedagogy 5 and 8, or Engr. 6 or Engr. 9*b*): Dom. Sci. & Art. Elective: Sci. & Lit., Normal. Prerequisites: Chem. 1*a*, 1*b*, 1*c*, 2, 14 or 16, 17.

The oxygen, sulphur, nitrogen, phosphorus and other derivatives of aliphatic and carbocyclic hydrocarbons are studied as fully as the time permits. The laboratory work consists of quantitative analysis.

10. AGRICULTURAL CHEMISTRY.—Junior year, spring term; five hours theory per week. Required: Agr. Prerequisites: Chem. 1*a*, 1*b*, 1*c*, 2, 17.

A study of the chemical side of soils and of the atmosphere in their relation to plant life. Special attention is paid to fertilizers and their relation to different kinds of soils and to different varieties of crops.

12. THESIS.—Senior year, spring term; one hour theory and eight hours practicum per week. A choice between this course and Chem. 5 is allowed. Elective only upon written application, approved by the head of the Department. Prerequisites: All preceding elective courses in the Department.

In The School of Science and Literature thesis is not required for graduation, but is elective. In this Department, which belongs to that School, it is elective under certain conditions, making it a reward for good scholarship. It is believed that a poor student or even a mediocre one can employ his time to better advantage by electing some other course than by trying to work out a thesis. For those who are permitted to elect thesis the classroom periods are devoted to the careful consideration of selected topics, such as typical investigations of famous chemists of the past and present. In the laboratory a serious experimental study of some subject of rather general interest is taken up. The work is intended to cultivate the powers of the student; more particularly his self-reliance and his ability to interpret experimental results. Theory reference books: Muir's "History of Chemical Theories and Laws"; "An-

nual Reports of Progress of Chemistry", published by the London Chemical Society; "Monographs", published by Royal Society of England.

14. ANALYTICAL CHEMISTRY.—Junior year, spring term; three hours theory and four hours practicum per week. Elective: Sci. & Lit., Normal. Prerequisites: Chem. 1*a*, 1*b*, 1*c*, 2, 17.

A careful consideration of the scientific foundations which underlie analytical chemistry, both qualitative and quantitative, is essential to proper training in these branches. This course is designed to give this training, and the application of the principles taught in this course is insisted upon in all the analytical work which follows. The laboratory work is elementary quantitative analysis.

15. PHYSICAL CHEMISTRY.—Senior year, fall term; three hours theory and four hours practicum per week. Elective: Sci. & Lit., Normal. Prerequisites: Chem. 1*a*, 1*b*, 1*c*, 2, 14 or 16, 17.

In this course the object is to give the student a working knowledge of that field of chemistry which is so modern and which is being so rapidly developed. The application of the principles of physical chemistry to the facts of inorganic and organic chemistry are dwelt upon in some detail. The laboratory work will be quantitative analysis.

16. CHEMISTRY OF NUTRITION AND SANITATION.—Junior year, spring term; three hours theory and four hours practicum per week. Required: Dom. Sci. & Art. Elective: Sci. & Lit., Normal. Prerequisites: Chem. 1*a*, 1*b*, 1*c*, 2, 17.

The chemical nature of foods—their nutritive and calorific values—are taken up, and some of the transformations which they undergo in the alimentary canal are discussed. Dietary calculations also constitute a part of the course. The laboratory work is along the same general lines.

17. APPLIED CHEMISTRY (Introductory).—Junior year, winter term; three hours theory and four hours practicum per week. Required: Agr., Dom. Sci. & Art. Elective: Sci. & Lit., Normal. Prerequisites: Chem. 1*a*, 1*b*, 1*c*, 2.

A brief introduction to the study of organic chemistry, together with lectures on application of organic chemistry to the feeding of man and of animals. In this course the principal homologous series of hydrocarbons, alcohols, aldehydes, etc., are taken up. It is intended to give the student well defined ideas concerning the characteristics of carbon which distinguish it from other elements, and to emphasize those nitrogen derivitives of the hydrocarbons which play an important part in the economy of nature—i. e., in fertilizers, foods, etc. The laboratory work will consist of experimental study of the preparation and properties of some typical organic compounds.

18. Physiological Chemistry.—Senior year, spring term; three hours theory and four hours practicum per week. Optional: Dom. Sci. & Art (Engr. 7 or Engr. 9*c*, or Pedagogy 6 and 9), Sci. & Lit. (Chem. 5), Normal (Chem. 5). Prerequisites: Chem. 8*a*, 8*b*.

This course is intended primarily for students of domestic science and is planned to coordinate as closely as practicable with their food work on the one hand and with their previous instruction in chemistry on the other hand. It is also intended for students specializing in chemistry, particularly if they are looking forward to the study of medicine or pharmacy. Choice between Chemistry 5 and 18 is allowed. Both cannot be taken by the same student.

Department of Entomology

C. E. Sanborn, *Professor*

This Department is well equipped with all necessary apparatus for carrying on investigation or research in the theory and practice of insect control.

The museum contains a systematic collection of the common injurious and beneficial insects of Oklahoma. The life history of these is arranged in such a manner as to present the student with a concrete view of the various stages of their development. The collection is being constantly increased, not only by the men in charge of the Department, but also by students who take work in the Department.

All up-to-date types of spraying machinery which are used for combating insects and diseases of plants in general are owned by the Department. In the practice work of spraying plants and trees, the students are not only taught how to use the machines, but in addition thereto are taught how to prepare the spray fluids which are used for controlling various diseases and insects.

An apiary is also owned by the Department, and in some of the regular courses of study instruction in bee culture is given. This instruction is, of course, primary, and the practice consists largely of acquainting the student with the apparatus used in bee culture, as well as the actual use of the same.

In studying the life history of insects, students are supplied with all necessary material, such as cages and other apparatus, necessary for making a full and complete investigation of any important topic in this Department.

SUBJECTS

1. ELEMENTARY ENTOMOLOGY.—Junior year, spring term; three hours theory and four hours practicum per week. Required: Agr. Elective: Sci. & Lit., Normal.

   Lectures and recitations on insects in general constitute the theory. A textbook is used as a guide in theory. The student becomes acquainted with the different groups of insects, and the anatomy by studying particular types during the practicum.

2. HOUSEHOLD ENTOMOLOGY.—Junior yĕar, spring term; one hour theory and two hours practicum per week. Required: Dom. Sci. & Art. Elective: Sci. & Lit., Normal.

   This work consists of a practical study of the insects of the household and practical remedies for their control. Collections of the insects are made, and practical demonstrations in how to apply remedies are given. Thus the student becomes acquainted with the insects and also the practical application of remedies for their control.

3. ECONOMIC ENTOMOLOGY.—Senior year, fall term; three hours theory and four hours practicum per week. Required: Agron., Com. & Mark. Elective: Sci. & Lit., Normal.

   This term's work is devoted to a study of our economic insects; their life histories, habits, natural enemies, and means of combating them. Field work and observations make the student acquainted with the insects, and enable him to recognize the best time and means of combating. Laboratory work is of a nature to acquaint him with the remedies and how applied.

4. THE BIOLOGICAL ASPECTS OF ENTOMOLOGY.—Senior year, winter term; two hours theory and four hours practicum per week. Elective: An. Husb., Agron., Dairy., Hort., Sci. & Lit., Normal.

   This work consists of a systematic study of the biological aspects of insects. A careful study is made of anatomy and physiology of insects; their adaptations to surroundings and the relations which they bear to man. The time devoted to laboratory work is taken up in a study of the external and internal structures, the physiology and metamorphosis, and the classification of some of our common insects.

5. SCIENTIFIC ENTOMOLOGY.—Senior year, spring term; three hours theory and four hours practicum per week. Elective: An. Husb., Agron., Dairy., Hort., Sci. & Lit., Normal.

   This term is devoted to the collection and classification of Oklahoma insects and a scientific study and grouping of them.

6. HORTICULTURAL ENTOMOLOGY.—Senior year, fall term; three hours theory and two hours practicum per week. Elective: An. Husb., Agron., Dairy., Hort.

   This course will portray the life histories of the fruit and shade

tree insect pests in such a manner that the student will become proficient in recognizing them. The practicum enables the student to become proficient in controlling the various forms in the most practical way.

Department of English and Public Speaking

E. R. BARRETT, *Professor*
N. W. ROCKEY, *Assistant*
HARRY R. O'BRIEN, *Assistant*
ISADORE SAMUELS, *Instructor*
J. EMERSON NYE, *Instructor*

A number of improvements have been made recently which enable the Agricultural and Mechanical College to keep pace with the constantly increasing attention that is being paid to English in other institutions. Large, beautiful recitation rooms on the second floor of the new Engineering Building have been given over to the use of this Department. The teaching force in the Department has been increased. A large number of books for supplementary reading and reference have been added to the library. A new course in advanced composition is offered for the year 1914-15.

The aim of the Department is two-fold: (1) To create such a love in the student for the best literature that he shall continue to read and enjoy it after his school days are over; (2) to teach the student to express himself clearly and forcibly in writing and speaking.

SUBJECTS

1*a-b-c*. Freshman year, fall, winter and spring terms; four hours theory per week. Required: Agr., Engr., Sci. & Lit., Dom. Sci. & Art, Normal, Com. & Mark. Prerequisites: Sub-Freshman English.

This course comprises, (1) an introduction to literature; (2) a review of English grammar; (3) work in composition. The fall term is devoted primarily to literature. The aim is to acquaint the student as fully as possible with a fairly wide range of literature. A study of some of the more important Grecian myths is taken up as supplementary work. A short theme is required at least once a week throughout the term. During the winter term the study of English grammar is taken up, special stress being placed on syntax. Frequent themes are required. The work of the spring term consists principally of the study and practice of the principles of composition. The text is used merely as a guide. Numerous short themes and an occasional long one are required. Frequent individual conferences between students and teachers are an essential part of the work. Throughout the year students

must have access to an unabridged dictionary; they are urged to buy either the International, the New International or the Standard.

2a-b-c. Sophomore year, fall, winter and spring terms; four hours theory per week. Required: Agr., Engr., Sci. & Lit., Dom. Sci. & Art., Normal, Com. & Mark., Vet. Med. Prerequisites: Eng. 1*a*, 1*b*, 1*c*.

The work of the Sophomore year comprises, (1) the systematic study and practice of the forms of discourse, and (2) a study of some of the best English and American literature, both prose and poetry. The students in English 2 are grouped in recitation sections corresponding to the course in which they are specializing, all engineering students, for example, being grouped together. This arrangement makes it possible to adapt the instruction to the specific needs of the various groups of students, and the book used as the basis of work in composition is suited to such adaptation; it contains specimens of prose composition of all varieties. Throughout the year students must have access to an unabridged dictionary. The student is given two grades, one representing his work in literature, the other his work in composition. A student who receives either an E or F as his composition grade in the spring term must enter a special class in theme writing in the succeeding fall term. A student who fails in literature, or in both literature and composition, will make up the work in the usual way.

3. SHAKESPEARE.—Senior year, fall term; five hours theory per week. Optional: Dom. Sci. & Art (Eng. 9*a*, or Pedagogy 4 and 7, or Chem. 8*a*). Elective: Sci. & Lit., Normal. Prerequisites: Eng. 1 and 2.

A study will be made of the rise and development of the English drama, of the Elizabethan stage and the conditions under which the great dramatist wrote. "Twelfth Night", "Hamlet" and one other play will be read in class and several others will be assigned to be read and reported on.

6. THE POETRY OF TENNYSON.—Senior year, winter term; five hours theory per week. Optional (Eng. 9*b*, or Pedagogy 5 and 8, or Chem. 8*b*): Dom. Sci. & Art. Elective: Sci. & Lit., Normal. Prerequisites: Eng. 1*a*, 1*b*, 1*c*, 2*a*, 2*b*, 2*c*.

This course is designed to give students a comparatively thorough knowledge of one of the master poets of the Nineteenth Century, because it is believed that for the great majority of those who earnestly study him, Tennyson will prove the gateway to a lifelong love of all great poetry. The College Library contains a considerable number of critical works purchased for the students of this course.

7. CARLYLE AND RUSKIN.—Senior year, spring term; five hours theory per week . Optional (Eng. 9*c*, or Pedagogy 6 and 9, or Chem. 18): Dom. Sci. & Art. Elective: Sci. & Lit., Normal.

The assignment of work in this course varies from year to year.

In the spring of 1915 the following will be studied: Carlyle's Heroes, Hero Worship, and the Heroics in History. Ruskin's Selected Essays and Letters.

8*a-b-c.* ADVANCED COMPOSITION.—Junior year, fall, winter and spring terms; three hours theory per week. Required: Dom. Sci. & Art., Com. & Mark. Elective: An. Husb., Agron., Dairy., Hort., Sci. & Lit., Normal. Prerequisites: Eng. 1*a*, 1*b*, 1*c*, 2*a*, 2*b*, 2*c*.

The aim is to make this course intensely practical. The themes that are written by the class are used in the College publications whenever it is possible to do so. This course is co-elective with English 9a-b-c, and any term of one may be taken instead of the corresponding term of the other. Seniors may elect any term. Fall: The elementary principles of journalism are taken up. Papers of the nature of special articles for popular magazines, agricultural journals and Government bulletins are written. Winter: The winter term is devoted largely to argumentation. The principles of this form of discourse are studied. The composition work will consist of short arguments, editorials, and one or two debates. Spring: A study of the short story and general narrative composition.

9*a-b-c.* ENGLISH LITERATURE.—Junior year, fall, winter and spring terms; five hours theory per week. Optional (9*a*—with Eng. 3, or Pedagogy 4 and 7, or Chem. 8*a*; 9*b*—with Eng. 6, or Pedagogy 5 and 8, or Chem. 8*b*; 9*c*—with Eng. 7, or Pedagogy 6 and 9, or Chem. 18): Dom. Sci. & Art. Elective: Sci. & Lit., Normal. Prerequisites: Eng. 1*a*, 1*b*, 1*c*, 2*a*, 2*b*, 2*c*.

A general survey—Fall: Chaucer to Milton. Winter: Dryden to Burns. Spring: Wordsworth to Stevenson. This course involves more intensive and extensive work than it is possible for secondary schools to do. The principal study is of the literature itself, but enough attention is given to the lives of the authors and to the times in which they lived to enable the student to appreciate their work. Much reading of books from the library will be required.

PUBLIC SPEAKING

1*a-b-c.* VOCAL EXPRESSION (General Course).—Freshman year, fall, winter and spring terms; two hours practicum per week. Required: Agr., Engr., Dom. Sci. & Art (1*a*, 1*b*), Sci. & Lit., Normal, Com. & Mark.

The aim of the course is to stimulate thinking, to develop the organic means of revealing thought—the voice and the body—by training them to be more flexible and responsive to the mind.

2. VOCAL EXPRESSION (Advanced Course).—Junior year, fall term; one hour theory and two hours practicum per week.

Elective: An. Husb., Agron., Dairy., Hort., Sci. & Lit., Normal.

The work seeks to develop the proper use of the imagination, control of the emotion, sympathetic identification and an understanding of purposes in the various forms of public address. Special emphasis is laid upon originality of thought and its value in the interpretation of literature. The voice is trained for range, flexibility and tone-color.

3. DEBATING.—Junior year, winter term; one hour theory and two hours practicum per week. Elective: An. Husb., Agron., Dairy., Hort., Sci. & Lit., Normal.

A practical course in the preparation and delivery of debates.

4. PUBLIC ADDRESS.—Junior year, spring term; one hour theory and two hours practicum per week. Elective: An. Husb., Agron., Dairy., Hort., Sci. & Lit., Normal.

A practical course in the preparation and delivery of speeches of various kinds for various occasions.

Department of Mathematics

CARL GUNDERSON, *Professor*
R. E. HARTSOCK, *Associate Professor*
Z. N. HOLLER, *Assistant*
JOHN H. ANDREWS, *Assistant*

All regular College students are required to take work in mathematics. The amount required is different in the seven Schools of the College.

In all courses algebra and geometry are studied in the Freshman year. The engineers take up more advanced mathematics in their Sophomore and Junior years, and Senior engineers may take differential equations as an optional study.

Students in the Schools of Science and Literature and Teachers Normal Training may take the higher mathematics as elective work.

A short course in descriptive astronomy is offered in the spring term. This course is an elective in The School of Science and Literature and the School of Teachers Normal Training.

SUBJECTS

1*a*. ALGEBRA.—Freshman year, fall term; five hours theory per week. Required: Agr., Engr., Sci. & Lit., Dom. Sci. & Art., Normal, Com. & Mark. Prerequisite: Sub-Freshman Algebra.

Fundamental laws and operations; simple equations; factors; powers and roots; quadratic equations; graphs.

1*b*. ALGEBRA.—Freshman year, winter term; four hours theory per week. Required: Engr., Sci. & Lit., Dom. Sci. & Art, Normal. Prerequisite: Math. 1*a*.

Algebraic fractions; ratio; variation; proportion, fractional and negative exponents.

1*c*. ALGEBRA.—Freshman year, spring term; four hours theory per week. Required: Engr. Optional (Bot. 1*a*): Sci. & Lit., Normal. Prerequisites: Math. 1*a*, 1*b*.

Variables and functions; mathematical induction and binomial theorem; progressions; complex numbers; theory of equations; logarithms; limits; partial fractions; permutations and combinations.

2*a*. PLANE GEOMETRY.—Freshman year, fall term; four hours theory per week. Required: Engr., Sci. & Lit., Normal. Prerequisites: Fall and winter, Sub-Freshman Algebra.

First six chapters of Stone-Mills' Plane Geometry. Fundamental notions; angles; perpendiculars; parallels; triangles; quadrilaterals; polygons; loci; similar triangles; concurrent lines.

2*b*. PLANE GEOMETRY.—Freshman year, winter term; five hours theory per week. Required: Engr., Sci. & Lit., Normal. Prerequisite: Math. 2*a*.

Continuation of 2a. The remaining six chapters. Inequality; circles; metrical relations; areas; constructions; regular polygons.

2*c*. SOLID GEOMETRY.—Freshman year, spring term; five hours theory per week. Required: Engr., Sci. & Lit., Normal. Prerequisites: Math. 2*a*, 2*b*.

The relation of lines and planes in space; areas of surface; volumes of solids; polyhedrons; cylinders; cones; spheres; spherical triangles and polygons.

3. TRIGONOMETRY.—Sophomore year, fall term; five hours theory per week. Required: Engr. Elective: Sci. & Lit., Normal. Prerequisites: Math. 1*b*, 1*c*, 2*c*.

The development and use of trigonometric functions; relations between the functions; logarithms; solution of triangles; application of practical problems throughout the course.

4*a*. ANALYTIC GEOMETRY.—Sophomore year, winter term; three hours theory per week. Required: Engr. Elective: Sci. & Lit., Normal. Prerequisites: Math. 1*c*, 3.

The reference to points and lines to coordinate axes and the deduction of the equations of straight lines and of the curves of conic sections.

4*b*. ANALYTIC GEOMETRY.—Sophomore year, spring term; three hours theory per week. Required: Engr. Elective: Sci. & Lit., Normal. Prerequisites: Math. 3, 4*a*.

The general equation of the second degree; solid analytic geometry.

5. ASTRONOMY.—Sophomore year, spring term; four hours theory per week. Elective: Sci. & Lit., Normal. Prerequisites: Math. 1*a*, 2*b*.

The celestial sphere; reference lines and astronomical measurements; the solar system; laws of motion; evolution; stars; comets; nebulae; structure of the universe.

6*a*. CALCULUS.—Junior year, fall term; four hours theory per week. Required: M. E., E. E., C. E., A. E. Elective: Sci. & Lit., Normal. Prerequisites: Math. 4*a*, 4*b*.

The subject is developed from the method of limits; infinitesimals; rates; maxima and minima; partial differentiations; applications.

6*b*. CALCULUS.—Junior year, winter term; four hours theory per week. Required: M. E., E. E., C. E., A. E. Elective: Sci. & Lit., Normal. Prerequisites: Math. 4*b*, 6*a*.

Continuation of Mathematics 6a and introduction of integral Calculus.

6*c*. CALCULUS.—Junior year, spring term; four hours theory per week. Required: M. E., E. E., C. E., A. E. Elective: Sci. & Lit., Normal. Prerequisites: Math. 6*a*, 6*b*.

Integral calculus with application to problems in areas, volumes, center of gravity and other problems chosen from engineering life; expansion of functions.

7. DIFFERENTIAL EQUATIONS.—Senior year, fall term; three hours theory per week. Elective: Sci. & Lit., Normal. Prerequisites: Math. 6*b*, 6*c*.

This is an elective course; it deals with the solution of those differential equations that are most important to the engineer.

8*a*. PLANE GEOMETRY.—Freshman year, winter term; four hours theory per week. Required: Agr., Dom. Sci. & Art, Com. & Mark. Prerequisite: Sub-Freshman Algebra.

First four chapters of Stone-Mills' Plane Geometry.

8*b*. PLANE GEOMETRY.—Freshman year, spring term; five hours theory per week. Required: Agr., Dom. Sci. & Art, Com. & Mark. Prerequisite: Math. 2*d*.

The essentials of the remaining chapters of Stone-Mills' Plane Geometry.

Department of Foreign Languages

GUSTAV F. BROEMEL, *Professor*
ALMON AI ARNOLD, *Assistant*

A three years' course is offered in both German and Latin, and a two year's course in both Spanish and French. One year of German is required of Sophomores in The Schools of Domestic

Science and Art and Science and Literature. Sophomores in The School of Teachers Normal Training and Juniors in The School of Agriculture may elect it.

Two years of either German or French or Spanish are required of students in The School of Commerce and Marketing.

All courses in Latin are elective.

All students who elect a language are urged to study it at least a second year.

SUBJECTS

GERMAN

1*a-b-c*. BEGINNERS' COURSE.—Sophomore year, fall, winter and spring terms; four hours theory per week. Required: Sci. & Lit., Dom. Sci. & Art. Elective: Normal, (Junior and Senior) An. Husb., Agron., Dairy., Hort. Optional (Spanish 1*a-b-c*, French 1*a-b-c*): Com. & Mark. (Junior).

Mastery of inflections and of the elements of syntax. Reading of easy narrative prose. Written and oral translations from English to German. Conversation. Especial attention is given to acquiring a correct pronunciation. Daily practice throughout the year results, with a majority of students, in an accurate and facile pronunciation.

2*a-b-c*. ADVANCED READING COURSE.—Junior year, fall, winter and spring terms; five hours theory per week. Elective: (Junior and Senior) An. Husb., Agron., Dairy., Hort., Sci. & Lit., Normal. Optional (Spanish 2*a-b-c*, French 2*a-b-c*): Com. & Mark. (Senior).

The reading of prose is continued. Syntax is reviewed and studied more intensively. One hour a week will be given to composition. The spring term is devoted to reading scientific German.

3*a-b-c*. MASTERPIECES GERMAN LITERATURE.—Senior year, fall, winter and spring terms; five hours theory per week. Elective: Sci. & Lit., Normal.

Classic and modern literary German occupy most of the time, but scientific German of difficult character is read in the spring term. Composition is continued.

LATIN

1*a-b-c*. BEGINNERS' COURSE.—Sophomore year, fall, winter and spring terms; five hours theory per week. Elective: Sci. & Lit., Normal.

Drill on the essentials of Latin grammar, acquiring of vocabulary, reading stories from Roman history, anecdotes and fables.

1*a-b-c*. CAESAR.—Junior year, fall, winter and spring terms; five hours theory per week. Elective: Sci. & Lit., Normal.

Five books of the Gallic War are read. Methods of translation are carefully taught until the student reaches the point where diligence alone will give mastery. Constant drill in forms, syntax and pronunciation.

2*a-b-c*. CICERO AND VIRGIL.—Senior year, fall, winter and spring terms; five hours theory per week. Elective: Sci. & Lit., Normal.

Six books of Cicero's orations, including the four against Cataline. First book of Virgil and selections from the rest.

FRENCH

1*a-b-c*. BEGINNERS' COURSE.—Junior year, fall, winter and spring terms; four hours theory per week. Elective: Sci. & Lit., Normal. Optional (Spanish 1*a-b-c*, German 1*a-b-c*): Com. & Mark.

Essentials of French grammar; exercises in pronunciation. Chardenal's Complete French; Guerber's Contes et Legendes; Aldrich & Foster's French reader.

2*a-b-c*. ADVANCED COURSE.—Senior year, fall, winter and spring terms; five hours theory per week. Elective: Sci. & Lit., Normal. Optional (Spanish 2*a-b-c*, German 2*a-b-c*): Com. & Mark.

Irregular verbs; reading and composition. Merrimec's Colomba; Hugo's Les Miserables.

SPANISH

1*a-b-c*. BEGINNERS' COURSE.—Junior year, fall, winter and spring terms; four hours theory per week. Elective: Sci. & Lit., Normal. Optional (German 1*a-b-c*, French 1*a-b-c*): Com. & Mark.

A practical and thorough course conforming to the most advanced methods of teaching; careful treatment of pronunciation. The student realizes that he is learning a living language.

2*a-b-c*. ADVANCED COURSE.—Senior year, fall, winter and spring terms; five hours theory per week. Elective: Sci. & Lit., Normal. Optional (German 2*a-b-c*, French 2*a-b-c*): Com. & Mark.

The reading of prose is continued; the grammar is reviewed; one term is devoted to composing correct and intelligible business letters.

Department of Drawing and Art Work

ADA HAHN, *Instructor*
ISABELLE SNELLGROVE, *Assistant*

The aim of the course in this Department is to give training that is necessary for use in the practicum subjects of the College. In the Freshman year the drawing is so planned as to afford the same work for all students in courses where drawing is taken, giving only the elementary principles and their application in matters of everyday life.

In The School of Teachers Normal Training the course is planned for a further study of the teaching of drawing in the eight grades of the elementary schools. In The School of Domestic Science and Art a study is made of the principles of space, art and color harmony with regard to their use in interior and exterior decorations of homes and costumes. The object of the work is to develop an appreciation of good form and color, and to enable the student to exercise a more intelligent and sensitive discrimination in their use. Emphasis is laid upon simple, but well chosen and inexpensive decoration.

SUBJECTS

1*a*. ELEMENTARY DRAWING.—Freshman year, fall term; four hours practicum per week. Required: Agr., Engr., Sci. & Lit., Dom. Sci. & Art, Normal.

An elementary course designed for the development of graphic expression with special reference to the needs of engineers for freehand sketching; agriculturists in the study of plants and animals; domestic science and art students the study of space-art, and color application for home and dress; architects in space-art.

1*b*. OBJECT DRAWING AND SKETCHING.—Freshman year, winter term; four hours practicum per week. Required: Engr., Sci. & Lit. (women), Normal (women).

Further study of perspective, principles of representation of light and shadow, drawing from still-life, study of comparative proportions of parts and beauty of form related to common objects of practical use.

1*c*. ELEMENTARY DESIGN.—Freshman year, spring term; two hours practicum per week. Required: Dom. Sci. & Art, Normal.

Making of designs from spring blossoms and plant forms for motif, and their application to various materials. The principles of order, as expressed by balance, rhythm and harmony are considered and worked out.

2a. COMPOSITION.—Sophomore year, fall term; one hour theory and two hours practicum per week. Required: Dom. Sci. & Art.

Dark and light, with special reference to decorative usages in applied art. The theories of line, dark-and-light, are studied in their various relations of proportion, subordination, rhythm and tone values.

2b. COLOR THEORY.—Sophomore year, winter term; one hour theory and two hours practicum per week. Required: Dom. Sci. & Art.

Continuation of 2a, with a study of special problems in color harmonies; use of the stencil; block painting.

2c. APPLIED DESIGN.—Sophomore year, spring term; one hour theory and two hours practicum per week. Required: Dom. Sci. & Art.

Theory of design and its application to various materials.

3b-c. APPLIED ART.—Junior year, winter and spring terms; two hours theory and two hours practicum per week, winter term; one hour theory and two hours practicum per week, spring term. Required: Dom. Sci. & Art.

Application of design and color for home art; for furnishings, metal textiles and interiors.

5. TEACHING OF DRAWING.—Sophomore year, spring term; two hours theory per week. Elective: Normal.

This course deals with the teaching of drawing in the eight grades of the elementary schools. Illustrative work forms so large a part of modern educational methods it necessitates good drawing, and this course is planned to meet the needs of grade teachers. The following divisions will be studied: 1, Technique. 2, A pedagogical view of the subject. 3, Selection of materials. 4, The special purpose of teaching of drawing and general methods of presentation.

6. STUDIO WORK.—Hours arranged by the instructor. Elective: Subject to Faculty approval.

Opportunity is given for leather work, stenciling and block painting, and wood carving, china painting, oil and water color. This work is given only to students upon recommendation of the Department and approval of the Faculty.

7a-b. ARCHITECTURAL WATER COLOR DRAWING.—Senior year, fall and winter terms; four hours practicum per week. Required: A. E.

Theory of colors; methods of practice of water color rendering for architectural drawings.

Department of History

S. A. MARONEY, *Professor*

The study of history from the standpoint of general culture as well as that of specific educational value is becoming increasingly appreciated. The aim of this Department is to give, in so far as the limited time apportioned to it will permit, a general view of the social, economic and political development to train the student toward original thinking, and to fit him for intelligently assuming the duties of citizenship.

The College library contains many valuable reference works. The textbook in each course is the basis of the course, and some library reference work will be required. Lectures and student reports will form part of the work.

SUBJECTS

1*a*. AMERICAN HISTORY.—Freshman year, fall term; four hours theory per week. Required: Agr., Engr., Sci. & Lit., Dom. Sci. & Art, Normal, Com. & Mark.

A brief review of the colonial period. A study of the formation and development of the nation. A review of political parties and national problems. The aim will be to understand the life, the progress and the development of the American people.

1*b*. GOVERNMENT.—Freshman year, winter term; four hours theory per week. Required: Agr., Engr., Sci. & Lit., Dom. Sci. & Art, Normal, Com. & Mark.

The aim is to learn how we are governed. The facts concerning the local, state and national governments will be reviewed with some attention to the problems involved.

1*c*. MODERN HISTORY.—Sophomore year, fall term; four hours theory per week. Required: Com. & Mark. Elective: Sci. & Lit., Normal.

An outline study of the great series of revolutions, inventions, discoveries and artistic achievements since the Renaissance, that have brought into being the modern nations of Europe; with a consideration of their present national problems and their probable future.

2*a-b*. ENGLISH HISTORY.—Sophomore year, winter and spring terms; five hours theory per week, winter term; four hours theory per week, spring term. Required: Sci. & Lit., Normal.

Survey of rise of English nation, with particular attention to growth of free, Anglo-Saxon forms of government, and modern democracy, Industrial Revolution and modern life; also background of all English language and literature.

3. AMERICAN CONSTITUTIONAL HISTORY.—Junior year, spring term; four hours theory per week. Required: Com. & Mark. (Sophomore). Elective: Sci. & Lit., Normal.

With a brief survey of our colonial history and early struggles for independence, the course takes up a more detailed study of our late constitutional, social and political development; the growth of democracy, the struggle for the Union, the rise of the corporations, and the problems of civic justice and social welfare today.

4. HISTORY AND CONSTITUTION OF OKLAHOMA.—Senior year, spring term; three hours theory per week. Required: Normal.

A history of the political, industrial and educational upbuilding of the Commonwealth of Oklahoma, suitable for properly informing the citizens for intelligent discharge of important civil duties, and for equipping the teacher to handle the subjects successfully in the public schools.

THE SCHOOL OF TEACHERS NORMAL TRAINING

JOHN H. BOWERS, *Dean*

The literary, scientific and industrial work required of the students in The School of Teachers Normal Training is done in those Departments of the College having special facilities and equipment for teaching these branches efficiently and with greatest economy to the prospective teacher.

The subjects in The School of Teachers Normal Training are taught by the following Departments:

1. The Department of Pedagogy and Social Science.
2. The Department of Animal Husbandry.
3. The Department of Agronomy.
4. The Department of Dairying.
5. The Department of Horticulture and Botany.
6. The Department of Mechanical Engineering.
7. The Department of Electrical Engineering and Physics.
8. The Department of Domestic Science.
9. The Department of Domestic Art.
10. The Department of Zoology and Bacteriology.
11. The Department of Chemistry.
12. The Department of Entomology.
13. The Department of English and Public Speaking.
14. The Department of Mathematics.
15. The Department of Foreign Languages.
16. The Department of Drawing and Art Work.
17. The Department of History.
18. The Department of Political Economy and Marketing.
19. The Department of Music.
20. The Department of Physical Training.

B. S. Degree and State Life Certificate

Students who complete the full four years' course in the School of Teachers Normal Training receive both the Bachelor of Science degree and a State life certificate, which certificate is accepted in many other States.

Short Courses for Teachers' Certificates

Those who desire to prepare for teaching and do not wish to take the full four years' course can attend the College one or more terms and elect such studies as are necessary to secure a teachers' certificate. When a subject is completed at the College, that credit is accepted instead of examination on that subject for a teachers' certificate. All subjects required for a teachers' certificate are offered some time during the College year. A number of the subjects required for a teacher's certificate are offered during each term, but not quite all are offered during any one term, except the Summer term. During the Summer term all teachers' certificate subjects are offered.

Special Courses for Rural Teachers

The College offers excellent courses of study for those who are preparing to teach in the rural schools. The College instructors understand and appreciate the needs of country life, and devote their best efforts to the problems of rural welfare.

The candidate for graduation from The School of Teachers Normal Training, in addition to the pedagogical subjects and other subjects required for graduation and for a State permanent certificate, must select one of the major groups of studies in which at least forty-five hours credit shall be earned above the Freshman year. Other elective hours may be chosen from the major groups and from any other electives listed, subject to the approval of the Dean of the School.

The major groups of studies, from one of which the required forty-five hours must be chosen, are as follows: (1) Biological sciences; (2) English; (3) foreign languages; (4) history and social sciences; (5) Physical sciences. Mathematics above the Freshman year may be counted as a science. Chemistry is counted as a physical science.

Outline of Courses in The School of Teachers Normal Training, Giving Subjects and Hours

The figures and letters following the departmental name signify the serial number of the subject, and indicate the first (a), second (b), or third (c) term's work in the same subject. The name in parenthesis is the specific name of the subject, and the figures in column at the right of the name indicate the number of hours per week the subject is taught; classroom hours without parenthesis, practicum hours in parenthesis. The practicum period is two hours in length, and is equivalent to one hour classroom work in estimating number of hours per week to be taken. To graduate, a student must earn credits in sixty term-hours in each year. By "term-hours" is meant one hour of recitation or two hours of practicum per week, carried throughout one term. A student who carries more than the required Sophomore work will be allowed to apply the excess credit to the following year, but the maximum number of hours which may be so applied is five. In each college term a student must take at least eighteen hours and not more than twenty-three hours, unless by special permission. Junior electives are open to Seniors and Senior electives are open to Juniors, upon approval of adviser and head of department concerned. Military science and drill are required of all male students in the course.

FRESHMAN YEAR

FALL TERM	WINTER TERM	SPRING TERM
English 1*a*.....4	English 1*b*.....4	English 1*c*.....4
Mathematics 1*a*.....5 (Algebra)	Mathematics 1*b*.....4 (Algebra)	Mathematics 2*c*.....5 (Solid Geom.)
Mathematics 2*a*.....4 (Plane Geom.)	Mathematics 2*b*.....5 (Plane Geom.)	Physics 1.....4 (2) (Elementary)
History 1*a*.....4 (American)	History 1*b*.....4 (Government)	Mathematics 1*c*.....4 (Algebra)
Animal Husb. 1*a*..... (2) (Men) (Stock Judging)	Animal Husb. 1*b*.... (2) (Men) (Stock Judging)	or
Drawing 1*a*..... (4) (Elementary)	Drawing 1*b*..... (4) (Women) (Object)	Botany 1*a*.....3 (4) (Elementary)
Domestic Art 1*a*..... (2) (Women) (Sewing)	Domestic Art 1*b*.... (2) (Women) (Sewing)	Drawing 1*c*..... (2) (Ele. Design)
Public Speaking 1*a*.... (2) (Expression)	Mech. Engr. 1*a*..... (4) (Men) (Woodwork)	Domestic Art 1*c*..... (4) (Women) (Sewing)
Physical Training	Pub. Speaking 1*b*.. (2) (Expression)	Pub. Speaking 1*c*..... (2) (Expression)
	Physical Training	Physical Training

SOPHOMORE YEAR

FALL TERM	WINTER TERM	SPRING TERM
English 2*a*.....4	English 2*b*.....4	English 2*c*.....4
Chemistry 1*a*.....3 (4) (Inorganic)	Chemistry 1*b*.....3 (4) (Inorganic)	Chemistry 1*c*.....3 (4) (Inorganic)
Zoology 1.....3 (4) (General)	History 2*a*.....5 (English)	History 2*b*.....4 (English)
Agronomy 9.....3 (4) (Ele. Agriculture)	Physical Training (Women)	Physical Training (Women)
Physical Training (Women)		

SOPHOMORE ELECTIVES

FALL TERM	WINTER TERM	SPRING TERM
German 1*a*.....4 (Begin. Course)	German 1*b*.....4 (Begin. Course)	German 1*c*.....4 (Begin. Course)
Dairying 1.....2 (4) (Elementary)	Mathematics 4*a*.....3 (Analytics)	Mathematics 4*b*.....3 (Analytics)
Mathematics 3.....5 (Trigonometry)	Agronomy 10.....5 (Geology)	Mathematics 5.....4 (Astronomy)
History 1*c*.....4 (Modern)	Music 2	Music 2
Music 5	Latin *b*.....5 (Begin. Course)	Latin *c*.....5 (Begin. Course)
Latin *a*.....5 (Begin. Course)	Horticulture 1.....3 (2) (Orch. Fruits)	Drawing 5.....2 (Teach. of Draw.)
Dom. Science 5.....2 (Soc. Observances)	Zoology 5.....3 (4) (Comp. Anat.)	Horticulture 2.....4 (Veg. Gardening)
Botany 1*b*.....2 (4) (Elementary)	Dom. Science 2*a*....1 (4) (Food Work)	Zoology 6.....3 (4) (Systematic)
Agronomy 2.....3 (4) (Soils)		Dom. Science 2*b*.....1 (4) (Food Work)

JUNIOR YEAR

FALL TERM	WINTER TERM	SPRING TERM
Pedagogy 1.....5 (Psychology)	Pedagogy 2.....5 (Hist. of Educ.)	Pedagogy 3.....5 (Meth. & Man.)
Music .....2 (Pub. School.)		

JUNIOR ELECTIVES

Group I—Biological Sciences

FALL TERM	WINTER TERM	SPRING TERM
Botany 2.....3 (4) (Plant Phys.)	Botany 3.....2 (4) (Plant. Phys.)	Botany 4.....2 (4) (Plant Mycol. & Pathology)
Physiology 1.....3 (4) (Advanced)	Zoology 2.....3 (4) (Histology)	Zoology 3.....3 (4) (Gen. Biology)
		Entomology 2.....1 (2) (Household)
		Entomology 1.....3 (4) (Elementary)

Group II—History and Social Science

FALL TERM	WINTER TERM	SPRING TERM
Political Economy & Marketing 3.....3 (Municipal Problems)	Political Economy & Marketing 5....4 (Legislation)	Political Economy & Marketing 7.....4 (Rural Prob.)
Political Economy & Marketing 2.....4 (Elements of Economics)		History 3.....4 (Am. Constitu.)

Group III—English Language

FALL TERM	WINTER TERM	SPRING TERM
English 8*a*.....3 (Adv. Comp.)	English 8*b*.....3 (Adv. Comp.)	English 8*c*.....3 (Adv. Comp.)
English 9*a*.....5 (Eng. Lit.)	English 9*b*.....5 (Eng. Lit.)	English 9*c*.....5 (Eng. Lit.)

Group IV—Foreign Languages

FALL TERM	WINTER TERM	SPRING TERM
German 2*a*.....5 (Adv. Reading)	German 2*b*.....5 (Adv. Reading)	German 2*c*.....5 (Adv. Reading)
Latin 1*a*.....5 (Caesar)	Latin 1*b*.....5 (Caesar)	Latin 1*c*.....5 (Caesar)
French 1*a*.....4 (Begin. Course)	French 1*b*.....4 (Begin. Course)	French 1*c*.....4 (Begin. Course)
Spanish 1*a*.....4 (Begin. Course)	Spanish 1*b*.....4 (Begin. Course)	Spanish 1*c*.....4 (Begin. Course)

Group V—Physical Sciences

FALL TERM	WINTER TERM	SPRING TERM
Physics 4.....3 (2) (Heat & Mechanics)	Physics 3.....3 (2) (Sound & Light)	Physics 2.....3 (2) (Electricity & Magnetism)
Chemistry 2.....3 (4) (Adv. Inorganic)	Chemistry 17.....3 (4) (Applied Org.)	Chemistry 14.....3 (4) (Analytical)
		Chemistry 16.....3 (4) (Food & Sanitation)

Group VI—Mathematics

FALL TERM	WINTER TERM	SPRING TERM
Mathematics 6*a*.....4 (Calculus)	Mathematics 6*b*.....4 (Calculus)	Mathematics 6*c*.....4 (Calculus)

Group VII—Free Electives

FALL TERM	WINTER TERM	SPRING TERM
Domestic Art 6..... (2) (Drafting)	Domestic Art 7..... (2) (Cutting & Fitting)	Domestic Art 8..... (4) (Dressmaking)
Pub. Speaking 2.....1 (2) (Adv. Expression)	Pub. Speaking 3....1 (2) (Debating)	Pub. Speaking 4.....1 (2) (Public Address)
Music 1 (2)	Music 1 (2)	Music 1 (2)
Dairying 1.....2 (4) (Elementary)	Dom. Science 6*b*....1 (2) (Food Work)	Dom. Science 6*c*.....1 (2) (Food Work)
Dom. Science 6*a*.....1 (4) (Food Work)		

SENIOR YEAR

FALL TERM	WINTER TERM	SPRING TERM
Pedagogy 4.....3 (4) (Theory & Prac.)	Pedagogy 5.....3 (Philosophy of Education)	Pedagogy 6.....3 (Edu. Psychology)
Pedagogy 7.....2 (H. S. Teaching)	Pedagogy 8.....2 (H. S. Adm.)	Pedagogy 9.....2 (School Super.)
		History 4.....3 (Oklahoma Hist., Government & School Law)

SENIOR ELECTIVES

Group I—Biological Sciences

FALL TERM	WINTER TERM	SPRING TERM
Bacteriology 1.....3 (4) (General)	Bacteriology 2.....2 (4) (Agricultural)	Bacteriology 3.....2 (4) (Technical)
Botany 6.....3 (4) (Spec. Systematic)	Botany 8.....3 (4) (Morphology)	Botany 9.....3 (4) (Gen. Morphol.)
Entomology 3.....3 (4) (Economic)	Entomology 4.....2 (4) (Biological)	Entomology 5.....3 (4) (Scientific)
	Zoology 4.....2 (4) (Embryology)	Horticulture 3.....2 (2) (Forestry)

Group II—History and Social Science

FALL TERM	WINTER TERM	SPRING TERM
Social Science 5.....4 (Prin. of Sociol.)	Social Sci. 6.....4 (American Citizenship)	Social Sci. 8.....4 (Government)

Group III—English Language

FALL TERM	WINTER TERM	SPRING TERM
English 3.....5 (Shakespeare)	English 6.....5 (Tennyson)	English 7.....5 (Carlyle & Ruskin)

Group IV—Foreign Languages

FALL TERM	WINTER TERM	SPRING TERM
German 3*a*.....5 (Masterpieces)	German 3*b*.....5 (Masterpieces)	German 3*c*.....5 (Masterpieces)
Latin 2*a*.....5 (Cicero)	Latin 2*b*.....5 (Cicero)	Latin 2*c*.....5 (Virgil)
French 2*a*.....5 (Adv. Course)	French 2*b*.....5 (Adv. Course)	French 2*c*.....5 (Adv. Course)
Spanish 2*a*.....5 (Adv. Course)	Spanish 2*b*.....5 (Adv. Course)	Spanish 2*c*.....5 (Adv. Course)

Group V—Physical Sciences

FALL TERM	WINTER TERM	SPRING TERM
Chemistry 8*a*.....3 (4) (Adv. Organic)	Chemistry 8*b*.....3 (4) (Adv. Organic)	Chemistry 5.....2 (6) (Industrial) or
Chemistry 15.....3 (4) (Physical)		Chemistry 18.....3 (4) (Physiological)

Group VI—Mathematics

FALL TERM	WINTER TERM	SPRING TERM
Mathematics 7.....3 (Differ. Equa.)		

Group VII—Free Electives

FALL TERM	WINTER TERM	SPRING TERM
Music 1 (2)	Music 1 (2)	Music 1 (2)
Dom. Science 12*a*.....2 (2) (Teaching)	Dom. Science 12*b*..2 (2) (Teaching)	Dom. Science 12*c*.....2 (2) (Teaching)

Department of Pedagogy and Social Science

JOHN H. BOWERS, *Professor*

SUBJECTS

PEDAGOGY

1. PSYCHOLOGY.—Junior year, fall term; five hours theory per week. Required: Normal. Elective: An. Husb., Agron., Dairy., Hort., Sci. & Lit., Com. & Mark.

   The primary purpose of this course is to teach the conditions, processes and laws of mental development; and to understand the motives and forces that give rise to human conduct. The psychology of childhood and of adolescence is presented in its practical phases for the benefit of teachers. Other topics are: The relation of the body to the mental activity and development, fatigue, temperament, imitation, suggestion, apperception, attention, association of ideas, imagination, memory, emotion, will, thinking, the laws of expression, and the relation of ideals to conduct. Students will prepare for and verify the class discussions by reading from a number of authorities, including the following: James, Dewey, Angell, Baldwin, Tichener, Thorndike, Bowne, Judd, Wundt and Stout. Teachers who complete this course will be credited on teachers' certificates.

2. HISTORY OF EDUCATION.—Junior year, winter term; five hours theory per week. Required: Normal. Elective: Sci. & Lit.

   The purpose of this course is to arrive at correct notions of what ought to be done in the light of what has been done, the diversity of educational ideals in different countries and the best methods for future advancement. The further aim is to create a deep interest in the lives and works of great educators as a source of inspiration and guidance.

3. METHODS AND MANAGEMENT.—Junior year, spring term; five hours theory per week. Required: Normal.

   The aim of this course is to present the general methods of learn-

ing and of teaching, followed by the special methods of teaching the different school subjects. The further aim is to study the problems of school gradation, classification, organization and government; also that of securing the cooperation of the community, making conditions favorable for intellectual development and promoting the general welfare of the school. Students will prepare for the class discussions by reading assignments from such books as McMurry's General Method, Method of the Recitation, Special Method in History, Special Method in Geography, Special Method in Elementary Sciences, Mace's Method in History, Bagley's Classroom Management, White's School Management, Spencer's Education, Roark's Method in Education, and Dutton's School Management. Teachers completing this course will receive credit for same on teachers' certificates.

4. Theory and Practice of Teaching.—Senior year, fall term; three hours theory and four hours practicum per week. Required: Normal. Optional (and Pedagogy 7, with Eng. 3, or Eng. 9*a*, or Chem. 8*a*): Dom. Sci. & Art.

The theoretical part of this course deals with such topics as: The teacher before the class; conducting the recitation; training pupils to study and to think; teaching pupils the art of securing, retaining and expressing useful knowledge; and the various means of developing the several school subjects. As far as possible the practice work of this course is planned to suit the needs and promote the welfare of the individual student-teacher. In theory, the reading is done from such books as McMurry's How to Study, Hinsdale's Art of Study, Schaffer's Thinking and Learning to Think, Arnold's How to Teach Reading, White's Art of Teaching, Thorndike's Principles of Teaching, Bagley's Educative Process.

5. Philosophy of Education.—Senior year, winter term; three hours theory per week. Required: Normal. Optional (and Pedagogy 8, with Eng. 6, or Eng. 9*b*, or Chem. 8*b*): Dom. Sci. & Art.

This course deals with such problems as the philosophy of the learning process; educational psychology; the nature of education, its possibilities and its limitations; physical education; religious education; intellectual development; moral education; educational aims and values; education for discipline, for culture and for efficiency; individual and social education. The classroom discussions will be supplemented by readings from such works as Horne's The Philosophy of Education, Rosenkranz's Philosophy of Education, Grigg's Moral Education, Scott's Social Education, Davenport's Education for Efficiency, O'Shea's Social Development and Education, Dutton's Social Phases of Education, Hanus' Educational Aims and Educational Values, and Butler's The Meaning of Education.

6. Educational Psychology.—Senior year, spring term; three hours theory per week. Required: Normal. Optional (Pedagogy 9, with Eng. 7, or Eng. 9*c*, or Chem. 18): Dom. Sci. & Art. Elective: Sci. & Lit.

This course deals with the application of the laws and methods of

psychology to the work of teaching. Classroom lectures will be supplemented by assigned readings. Students will offer independent discussions before the class.

7. HIGH SCHOOL TEACHING.—Senior year, fall term; two hours theory per week. Required: Normal. Optional (and Pedagogy 4, with Eng. 3, or Eng. 9*a*, or Chem. 8*a*): Dom. Sci. & Art.

This course is devoted to the best methods of teaching high school subjects. General lectures will be supplemented by assigning to each individual student reading along the lines of his interests and his specialization. Some of the books used are: Smith's Teaching of Mathematics, Lloyd and Bigelow's Teaching of Biology, Smith and Hall's Teaching of Physics and Chemistry, Bourne's Teaching of History and Civics, Carpenter, Baker and Scott's Teaching of English, Young's Teaching of Mathematics.

8. HIGH SCHOOL ADMINISTRATION.—Senior year, winter term; two hours theory per week. Required: Normal. Elective: An. Husb., Agron., Dairy., Hort. Optional (and Pedagogy 5, with Eng. 6, or Eng. 9*b*, or Chem. 8*b*): Dom. Sci. & Art.

This course will deal with the curriculum, the organization and the management of the high school.

9. SCHOOL SUPERVISION.—Senior year, spring term; two hours theory per week. Required: Normal. Elective: An. Husb., Agron., Dairy., Hort. Optional (Pedagogy 6, with Eng. 7, or Eng. 9*c*, or Chem. 18): Dom. Sci. & Art.

The work in this course is devoted to the practical problems of public school organization and administration. Some of the topics are: The course of study, teachers' meetings, securing harmony and cooperation, the relation of the several school factors—directors, principals, teachers and students, school buildings, equipment, and general educational interests. The books used are: Chancellor's Our Schools, Their Administration and Supervision; Roark's Economy of Education, Gilbert's The School and Its Life, Shaw's School Hygiene, Burrage and Bailey's School Sanitation and Decoration. Whenever there is a call for work in rural school supervision, such work will be offered.

10. PSYCHOLOGY.—Junior year, fall term; three hours theory per week. Required: Dom. Sci. & Art.

This course is an abbreviation of Pedagogy 1 for students who have only three hours per week to give to the work.

11. HISTORY OF EDUCATION.—Junior year, winter term; three hours theory per week. Required: Dom. Sci. & Art.

This course is like Pedagogy 2, only it requires less time.

12. METHODS AND MANAGEMENT.—Junior year, spring term; three hours theory per week. Required: Dom. Sci. & Art.

This course is like Pedagogy 3 in content and aim.

SOCIAL SCIENCE

1. COMMERCIAL USAGES.—Senior year, fall term; four hours theory per week. Required: M. E., E. E., C. E., A. E.

This course includes commercial law, business methods and business organization and management. It includes the study of contracts, agencies, sales, negotiable paper, bailments, common carriers, real property, deeds, mortgages, insurance and other phases of the laws of business. Engineering students devote some time to engineering contracts and the business methods of engineers.

5. PRINCIPLES OF SOCIOLOGY.—Senior year, fall term; four hours theory per week. Elective: Sci. & Lit., Normal, Com. & Mark.

With a preliminary survey of the conditions of social life and the principles of social psychology and social organization, the course traces the development of the great human institutions of the family, the economic classes, the state, the church, the school and the higher life; and concludes with special attention to the factors involved in social progress, morality and social welfare.

6. THE DUTIES OF AMERICAN CITIZENSHIP.—Senior year, winter term; four hours theory per week. Elective: An. Husb., Agron., Dairy., Hort., Sci. & Lit., Normal.

With a preliminary survey of important social conditions in the United States, the course takes up the most practical methods of social betterment in respect to the family, neglected children, the working man, rural communities, public health, the great cities, the church, the great corporations and the Government.

8. GOVERNMENT.—Senior year, spring term; four hours theory per week. Elective: An. Husb., Agron., Dairy., Hort., Sci. & Lit., Normal.

A brief preliminary survey of the forms through which governments have evolved, a discussion of the principles of democracy, of the forms and actual practices of our American national, state and local governments, their constitutional development and their problems.

THE SCHOOL OF COMMERCE AND MARKETING

H. W. MOORHOUSE, *Dean*

The subjects in The School of Commerce and Marketing are taught by the following Departments:

1. The Department of Political Economy and Marketing.
2. The Department of Business Training.
3. The Department of Animal Husbandry.
4. The Department of Agronomy.
5. The Department of Horticulture and Botany.
6. The Department of Electrical Engineering and Physics.
7. The Department of Zoology and Bacteriology.
8. The Department of Chemistry.
9. The Department of Entomology.
10. The Department of English and Public Speaking.
11. The Department of Mathematics.
12. The Department of Foreign Languages.
13. The Department of History.
14. The Department of Pedagogy and Social Science.

This course has been planned to give students an understanding of business and business relationships. Commerce, industry and trade have become so complex that men engaged in such activities must have a thorough knowledge of business methods and economic principles. Commerce, which was once limited to small, restricted areas, now, by reason of transportation and communication facilities, covers the entire earth. Marketing, at one time a single transaction, is now an intricate process, weaving its way through a maze of varied industry and business. Since the great majority of students enter some branch of industry, it is important that opportunity should be given, in a course of this kind, to gain a grasp of fundamental business principles.

This course is comprehensive. Academic, science, commercial and economic subjects are included in well balanced relationship. The graduate of this course will not only possess the essentials of

scientific and literary knowledge, but will be equipped to enter with confidence his chosen field of business affairs, whether it be manufacturing, agriculture, merchandising, transportation, or any other, and he will outstrip other men because his view is not limited. He will succeed because he understands the complex organization of business.

Attention is called to the strong English requirements of this course. In addition to its cultural value, English is important for its training in effective speaking and writing, which are so essential in every field of activity. Enough general science subjects are made a requisite to broaden the student's viewpoint and plant an interest which is certain to develop. Basic agricultural subjects are included, because agriculture is recognized as our foundation industry, and is the source of a large share of commercial and economic problems. Shorthand and typewriting are required the first year, so that the student can use them through the balance of the course. They will not only facilitate class work, and afford training in accuracy, but will be of constant use in activities after graduation. A choice of three foreign languages is offered. Trade is no longer local, but is international. American corporations are multiplying their foreign representatives, and the National Government is extending its consular service. These opportunities are opening only to men who are prepared. The economic subjects have been planned for their practical application, as well as for their liberalizing value. They are divided into three groups, as follows: *General Group*: Elements of Business, Elements of Economics, Municipal Problems, Business Organization, Legislation, International Relations. *Rural Welfare Group*: Rural Problems, Rural Finance, Rural Organization. *Varied Industry Group*: Transportation, Manufacturing, Banking and Public Finance, Insurance and Investments, Markets and Marketing. A description of each of these subjects is given on following pages.

Outline of Courses in The School of Commerce and Marketing, Giving Subjects and Hours

The figures and letters following the departmental name signify the serial number of the subject, and indicate the first (a), second (b), or third (c) term's work in the same subject. The name in parenthesis is the specific name of the subject, and the figures in column at the right of the name indicate the number of hours per week the subject is taught; classroom hours without parenthesis, practicum hours in parenthesis. To graduate, a student must earn credits in all subjects outlined in the course. Military science and drill are required of all male students in this course.

FRESHMAN YEAR

FALL TERM	WINTER TERM	SPRING TERM
English 1*a*.....4	English 1*b*.....4	English 1*c*.....4
Mathematics 1*a*.....5 (Algebra)	Mathematics 8*a*.....4 (Plane Geom.)	Mathematics 8*b*.....5 (Plane Geom.)
Physics 5.....4 (2) (Elementary)	History 1*b*.....4 (Government)	Pub. Speaking 1*c*..... (2) (Expression)
History 1*a*.....4 (American)	Pub. Speaking 1*b*.. (2) (Expression)	Botany 1*a*.....3 (4) (Elementary)
Pub. Speaking 1*a*..... (2) (Expression)	Typewriting ..... (10)	Typewriting ..... (10)
Political Economy & Marketing 1.....2 (Elements Bus.)	Shorthand 5	Shorthand 5
Physical Training	Physical Training	Physical Training

SOPHOMORE YEAR

FALL TERM	WINTER TERM	SPRING TERM
English 2*a*.....4	English 2*b*.....4	English 2*c*.....4
Chemistry 1*a*.....3 (4) (Inorganic)	Animal Husb. 2*a*....3 (4) (Breeds)	Agronomy 4.....3 (2) (Farm Crops)
Agronomy 2.....3 (4) (Soils)	Chemistry 1*b*.....3 (4) (Inorganic)	Agronomy 3.....1 (2) (Grain Judging)
Political Economy & Marketing 2.....4 (Elements Eco.)	Horticulture 1.....3 (2) (Orchard Fruits)	Business Arith.....4
History 1*c*.....4 (Modern)	Zoology 1.....3 (4) (General)	Business Law 5
		History 3.....4 (Am. Constitu.)

JUNIOR YEAR

FALL TERM	WINTER TERM	SPRING TERM
Political Economy & Marketing 3.....3 (Municipal Problems)	Political Economy & Marketing 13..3 (Insurance & Investments)	Political Economy & Marketing 12.....4 (Banking & Public Finance)
Political Economy & Marketing 9.....3 (Rural Organization)	Political Economy & Marketing 5....4 (Legislation)	Political Economy & Marketing 7.....4 (Rural Problems)
Pedagogy 1.....5 (Psychology)	Bookkeeping ..... (10)	Bookkeeping ..... (10)
Spanish 1*a*.....4 (Begin. Course) or	Spanish 1*b*.....4 (Begin. Course) or	Spanish 1*c*.....4 (Begin. Course) or
German 1*a*.....4 (Begin. Course) or	German 1*b*.....4 (Begin. Course) or	German 1*c*.....4 (Begin. Course) or
French 1*a*.....4 (Begin. Course)	French 1*b*.....4 (Begin. Course)	French 1*c*.....4 (Begin. Course)
English 8*a*.....3 (Adv. Comp.)	English 8*b*.....3 (Adv. Comp.)	English 8*c*.....3 (Adv. Comp.)

SENIOR YEAR

FALL TERM	WINTER TERM	SPRING TERM
Political Economy & Marketing 8.....2 (Rural Finance)	Political Economy & Marketing 14..4 (Markets & Marketing)	Political Economy & Marketing 11.....4 (Manufacturing)
Political Economy & Marketing 4.....3 (Business Organization)	Political Economy & Marketing 6....3 (International Relations)	Political Economy & Marketing 10.....4 (Transportation)
Social Science 5.....4 (Sociology)	Principles of Accounting 5	H. Acct. & Aud.....5
Spanish *2a*.....5 (Adv. Course) or	Spanish *2b*.....5 (Adv. Course) or	Spanish *2c*.....5 (Adv. Course) or
German *2a*.....5 (Adv. Course) or	German *2b*.....5 (Adv. Course) or	German *2c*.....5 (Adv. Course) or
French *2a*.....5 (Adv. Course)	French *2b*.....5 (Adv. Course)	French *2c*.....5 (Adv. Course)
Entomology 3.....3 (4) (Economic)	English 5	

Department of Political Economy and Marketing

H. W. MOORHOUSE, *Professor*

SUBJECTS

GENERAL GROUP

1. ELEMENTS OF BUSINESS.—Freshman year, fall term; two hours theory per week. Required: Com. & Mark. Elective (Junior or Senior): An. Husb., Agron., Dairy., Hort.

   The purpose of this course is two-fold: First, to give a working knowledge of business forms, instruments and methods; and second, to set forth a broad view of the elemental principles of business relations.

2. ELEMENTS OF ECONOMICS.—Sophomore year, fall term; four hours theory per week. Required: Com. & Mark. Elective: Sci. & Lit., Normal (Junior).

   Introduction to the study of business economics and industrial and social problems, showing interrelation of all commercial activities. Prerequisite for all economic subjects, except Elements of Business and subjects of the Rural Welfare Group.

3. MUNICIPAL PROBLEMS.—Junior year, fall term; three hours theory per week. Required: Com. & Mark. Elective: Sci. & Lit., Normal.

   This course traces the growth of the city and the problems that have arisen with the congestion of population. It includes a study of city administrative departments, government by commission and by one manager, and full discussions of municipal control and ownership of public utilities. Offered alternate years. Given 1914-15.

4. BUSINESS ORGANIZATION.—Senior year, fall term; three hours theory per week. Required: Com. & Mark.

   Commercial growth has come to be mainly dependent upon organization and cooperation. The organization of the modern

corporation, trust and holding company is the subject of special study. Emphasis is placed upon the essentials of business administration. The expanding influence of mercantile and manufacturers' associations is shown. Offered alternate years. Not given 1914-15.

5. LEGISLATION.—Junior year, winter term; four hours theory per week. Required: Com. & Mark. Elective: Sci. & Lit., Normal.

The Governments of the States and Nations are exercising growing control over business activities. In this course the organization of legislative bodies, particularly the State Legislature, is studied in detail to give an idea of the actual processes by which measures become laws. The relation of the executive, judiciary and legislative branches of government is shown. A view is given of some of the imminent problems which may be capable of partial solution by governmental action. Offered alternate years. Given 1914-15.

6. INTERNATIONAL RELATIONS.—Senior year, winter term; three hours theory per week. Required: Com. & Mark.

In order to do our part in bringing about the best social and trade relations between all countries, we should be intimately acquainted with their resources, people and Governments, and with our own foreign policies. The Monroe Doctrine, immigration, international arbitration and law are some of the bases for thorough inquiries. Offered alternate years. Not given 1914-15.

RURAL WELFARE GROUP

7. RURAL PROBLEMS.—Junior or Senior year, spring term; four hours theory per week. Required: (Senior) An. Husb., Agron., Dairy., Hort., (Junior) Com. & Mark. Elective (Junior): Sci. & Lit., Normal.

A study of farm business and rural life. A view of the relation of the farm home, social life, good roads, community cooperation, tenancy, soil conservation, standardization of crops, rural credits and better marketing to rural progress. A broad view of the possibilities of reorganizing agriculture and rural life. A thorough survey is made of rural conditions in foreign countries, and United States and Oklahoma. Offered alternate years. Given 1914-15.

8. RURAL FINANCE.—Senior year, fall term; two hours theory per week. Required: Com. & Mark. Elective: An. Husb., Agron., Dairy., Hort.

A study of the rural credit systems of European countries with special reference to the possibility of their successful establishment and operation in the United States. An investigation also of our present currency laws in their relation to rural progress. Offered alternate years. Not given 1914-15.

9. RURAL ORGANIZATION.—Junior year, fall term; three hours theory per week. Required: Com. & Mark. Elective

(Junior or Senior): An. Husb., Agron., Dairy., Hort.

A survey of the establishment and history of farmers' associations, particularly in the United States and Oklahoma, noting their present strength and influence, and reasons for various failures. Particular study is given to the legal formation of cooperative corporations. Offered alternate years. Given 1914-15.

VARIED INDUSTRY GROUP

10. TRANSPORTATION.—Senior year, spring term; four hours theory per week. Required: Com. & Mark.

This course deals primarily with railroad economics, but some attention is given to water and rural road transportation. The subject includes the history of railroad development in the United States, showing present problems and the relation of transportation to commerce. The records and reports of State Railroad Commissions and the Interstate Commerce Commission are analyzed. Railroad administration in foreign countries is investigated, and study is made of governmental ownership. Offered alternate years. Not given 1914-15.

11. MANUFACTURING.—Senior year, spring term; four hours theory per week. Required: Com. & Mark.

A study of manufacturing and labor problems. The development of industry is traced from its beginnings to its present highly specialized processes. Special observations are made of industrial centers and causes contributing to their growth for the purpose of understanding the principles of economy, which should govern the location and operation of manufacturing. Labor problems, which are the outgrowth of modern industry are carefully investigated. Labor unions, strikes, compulsory arbitration, employers' liability, workmen's insurance, the minimum wage, and actual conditions of the laborer are some of the subjects for consideration. Offered alternate years. Not given 1914-15.

12. BANKING AND PUBLIC FINANCE.—Junior year, spring term; four hours theory per week. Required: Com. & Mark.

The relation of money and credit to every business activity is shown, and studies are made of the currency systems of the United States and foreign countries. The study includes a history of banking development, and of the growth of trust companies and their relation to commerce. Inquiries are made into questions of public revenues and expenditures. The various kinds of taxation, the income, the inheritance, corporation, and general property taxes are investigated. Offered alternate years. Given 1914-15.

13. INSURANCE AND INVESTMENTS.—Junior year, winter term; three hours theory per week. Required: Com. & Mark.

A study of life and property insurance and various kinds of insurance organization. A view of the financial growth of insurance companies, showing their relation to the development of the country and their present financial influence. An investigation of bonds, stocks, mortgages and all standard investments. Offered alternate years. Given 1914-15.

14. MARKETS AND MARKETING.—Senior year, winter term, four hours theory per week. Required: Com. & Mark.

With the development of commerce, trade transactions have come to be of essential importance. In this course the scope of marketing is shown, with emphasis on the exchange process, including not only the activities of merchants and bankers, but also of manufacturers and farmers when they act as exchange dealers. A survey is made of the important money, cotton, grain, livestock and other markets in this and other countries. United States consular reports and statistical information bearing on exports and imports of various countries are analyzed. Inquiries are made into opportunities for international trade development. Offered alternate years. Not given 1914-15.

Department of Business Training

S. C. BEDINGER, *Principal*
A. C. DOERING, *Assistant*
H. T. HILL, *Assistant*

All the work of the Department of Business Training is closely associated with the high grade class instruction given in the College course. Students desiring this course must pass examinations in reading, spelling, penmanship, geography, United States history, grammar and arithmetic.

Applicants may be admitted to the Department without examination on satisfactory records from the eighth grade of city schools or on diplomas from common schools.

All applicants for this course must have attained the age of eighteen years.

Two courses of instruction are offered by the Department, viz: (*a*) Business; (*b*) Stenographic.

The subjects of the Department of Business Training are taught by the following Departments:

The Department of Bookkeeping.
The Department of Stenography.
The Department of English and Public Speaking.
The Department of Mathematics.
The Department of Physical Training.

These courses enable many young men and women to become efficient salaried employes by providing instruction in the funda-

mental subjects of a general education and training them as expert accountants, stenographers and clerks.

The regular courses continue in the Department until the close of the Summer School, making an eleven months' course.

Outline of Courses in the Department of Business Training, Giving Subjects and Hours

The figures in column at the right of name indicate the number of hours per week the subject is taught; classroom hours without parenthesis, practicum hours in parenthesis. The practicum period is two hours in length, and is equivalent to one hour classroom work in estimating number of hours per week to be taken. Physical training is required of all Business Course students.

BUSINESS COURSE

FALL TERM	WINTER TERM	SPRING TERM
Bookkeeping ..... (10)	Bookkeeping ..... (10)	Bookkeeping ..... (10)
Spelling 2	Spelling 2	Spelling 2
Penmanship ..... (3)	Penmanship ..... (3)	Penmanship ..... (3)
English 4	English 4	Rapid Calculation..... (3)
Arithmetic 4	Arithmetic 4	Business Law.....4
Business Law 4	Business Law 4	Bus. Correspond..... (3)
Physical Training	Physical Training	Physical Training

COURSE IN STENOGRAPHY

FALL TERM	WINTER TERM	SPRING TERM
Shorthand Theory.....5	Shorthand Theory..5	Shorthand Theory.....5
or	or	or
Office Training.....5	Office Training.....5	Office Training 5
Dictation ..... (10)	Dictation ..... (10)	Dictation ..... (10)
Penmanship ..... (3)	Penmanship ..... (3)	Penmanship ..... (3)
Spelling 2	Spelling 2	Spelling 2
Typewriting (10) or (15)	Typewriting (10) or (15)	Typewriting (10) or (15)
English 4	English 4	Bus. Correspond.....4
Physical Training	Physical Training	Physical Training

Business Course

The Business course embraces bookkeeping, farm and factory accounting, auditing, banking, spelling, penmanship, business law, commercial arithmetic, rapid calculation, English and business correspondence. A brief description of the work follows:

SUBJECTS

BOOKKEEPING.—Fall, winter and spring terms; ten hours practicum per week.

Since the principles of bookkeeping are constant it is the aim of the Department to so thoroughly familiarize the student with these principles that he can take charge of any set of books and keep them intelligently and accurately. This course runs through three terms.

Introductory work deals with elementary bookkeeping, bringing into use the ordinary books of account. Special emphasis is placed on the journal, daybook, ledger, posting, closing, making financial

and business statements, old style balance sheet, and trial balance. Much attention is given to writing the common business forms, such as drafts, leases, notes, checks, bills, telegrams, receipts. Students who have finished this section of the work satisfactorily are well trained bookkeepers, and are qualified to enter an office and do the work in a practical, reliable and systematic manner.

Farm Accounting covers the transactions of a representative farm, through a period of an entire year. The records of the first month, January, give in detail all entries from the original records through the general accounts to the trial balance at the end of the month. For the remaining eleven months, monthly summaries of routine transactions are given which present all data necessary for the accounting entries of an average farm for this period of time. The student will require from four to six weeks to work this set, and it can be given most advantageously after a preparatory course in general business accounting and practice.

Advanced work requires the student to work out sets in corporation bookkeeping, commission and consignment, wholesale and retail, and manufacturing. In this as well as in the introductory course the work is designed to teach bookkeeping as it is practiced in the best business houses. In this section are illustrated loose leaf consignment sheets, impression sales book, letter copying book; daily abstract sales, charged and cash sales, card ledger organization and management of corporations, factory costs and accounting kept by the voucher method. A thorough drill is also given in single entry bookkeeping.

Banking.—Part I of this subject deals with: The business of a bank; different kinds of banks; bank officers and clerks; banking customs. Part II is devoted to bank accounting. Here the student performs in turn the work of receiving teller, paying teller, bookkeeper, and that of the other clerks of a bank. Part III contains a clear statement of the following subjects: Clearing house, foreign exchange, letters of credit and travelers' checks.

Actual Business.—Upon completion of the Introductory and Advanced work in bookkeeping and banking, the class is resolved into a miniature business world. Each student provides himself with the necessary books and business forms for carrying on an actual business. Each student is supplied with a cash capital sufficient to start into business. He thereupon leases a building, buys, sells, insures, borrows money, keeps a bank account, ships goods by freight, and makes all trades possible that are common to business life. Thus imitating the business world, he puts into practice every principle of bookkeeping heretofore learned. He makes or loses money—either of which he must show on his books—and should contention arise over some dealing, may in mock trial sue or be sued. Students in turn have charge of the bank, wholesale and commission offices.

PENMANSHIP.—Fall, winter and spring terms; three hours practicum per week.

The object of the work in penmanship is four-fold: First, to secure a good position of hand and body and to secure a free and easy movement; second, to secure a knowledge of the forms of the letters; third, to secure such speed as is consistent with legi-

bility and ease; fourth, the application of writing to other forms—especially business forms and correspondence. Stenographers and bookkeepers are required to take penmanship.

SPELLING.—Fall, winter and spring terms; two hours theory per week.

All persons taking the Business Course must carry this subject. Thousands of positions are each year either not secured or lost on account of bad spelling. The value of spelling to the stenographer especially is obvious. The same is almost equally true with the bookkeeper. The work in spelling is always written. Students are required to make a grade of 95 percent on examination in the subject before securing diploma.

COMMERCIAL ARITHMETIC.—Fall, winter and spring terms; four hours theory per week.

The work covered by this subject is the same as that included in any first class higher arithmetic. More than usual attention is given to the solution of problems, and to the principles of arithmetic as well. **Why** is taught as well as **how.**

RAPID CALCULATION.—Spring term; three hours theory per week.

A subject of vital importance to the accountant. The work of the spring term is devoted almost wholly to rapid addition, short cuts in figuring interest and to rapid calculation generally.

BUSINESS LAW.—Fall, winter and spring terms; four hours theory per week.

From a business standpoint, perhaps there is no subject in the course which is worth as much to the student as commercial law. This subject takes up contracts, negotiable paper, partnership, sale of chattels, interest, usury, wills, conveyances of real estate, mortgages, etc. The chief aim of this subject is to inform the student how to keep out of difficulties rather than to enable him to extricate himself after he is once involved.

ENGLISH.—Fall and winter terms; four hours theory per week.

The work is in general divided into three parts. Review of grammar and a thorough study of punctuation, a study of good English, based upon Marshall's Business English, and a course in business letter writing. Throughout the course the primary aim is to develop the student's power of expressing himself in speech and in writing.

BUSINESS CORRESPONDENCE.—Spring term; three hours theory per week.

One term is devoted to the subject. The student is given a large amount of practice in writing various kinds of letters—letters of inquiry, recommendation, introduction, duns, bills, remittances, circular letters, telegrams, letters of congratulation and condolence, and so on. A careful study is given to the rules of punctuation, meaning of words, variety of expression.

Stenographic Course

Students having a good common school education may finish the course in shorthand in eleven months. The success and proficiency of the student will depend entirely upon his energy, ability and previous training. The student who devotes ten months to this work is better prepared to take up the duties of an office or an amanuensis than the student who devotes only five or six months to it. The general requirements of a competent stenographer do not consist simply of the ability to write shorthand. There must be a knowledge of composition, punctuation, capitalization, grammar, spelling, and the proper arrangement of sentences. For this reason students are required before finishing the course to pass a satisfactory examination upon the subjects named above in addition to the regular examination in shorthand and typewriting.

The course embraces shorthand, typewriting, letterpress copying, writerpress, mimeographing, manifolding, etc., together with spelling, penmanship and English.

The work in stenography is divided into three parts, viz: Theory, education and office practice.

SUBJECTS

SHORTHAND THEORY.—Fall, winter and spring terms; five hours theory per week.

By shorthand theory is here meant the part of stenography devoted to phonetic spelling, sounds of the letters, principles of the system, word signs, contractions and phrases. All of this work is based on the manual—the Gregg system being the one used.

SHORTHAND DICTATION.—Fall, winter and spring terms; fall and spring terms, ten hours theory per week; winter term, ten hours practicum per week.

The work of theory and that of dictation are by no means separate and distinct, since dictation begins early in the theory work, and theory continues through dictation. However, the second division of the work is more largely dictation. During this period much reading of shorthand is required in order to familiarize the student with forms and to increase the rapidity of reading notes. Before advancing to office practice, the student should develop sufficient ability to write from dictation at an average speed of seventy-five words a minute for a period of half an hour from new matter. He should also be able to write **new matter** at the rate of 100 words a minute for five minutes.

SHORTHAND OFFICE TRAINING.—Fall, winter and spring terms; five hours theory per week.

In this department an entirely new plan is presented for giving the finishing touches to the stenographic course. The course is designed to give the student the knowledge and training that employers designate as "experience". The work in this department is founded on the idea that such a course should be an integral part of the regular course of study in the advanced shorthand department. In other words, it should go hand in hand with shorthand and typewriting just as English and spelling do. The student is taught to write a forceful business letter, and to arrange it attractively on the letterhead. He is taught to apply for a position in person, in writing, or through the medium of advertisements.

All of the modern office appliances are dealt with in a thorough and comprehensive manner. The student is taught to file letters in accordance with all the methods used in the modern office. He is given a complete knowledge of telegrams and cablegrams, business and legal papers, contracts, statements, invoices, etc.—not by merely copying printed forms, but by actually doing the work. When the student finishes the work in this department he is able to do all of the work and office routine required of the stenographer today. He has what the business world demands—efficiency.

TYPEWRITING.—Fall, winter and spring terms; fifteen hours practicum per week, fall term; ten hours practicum per week, winter and spring terms.

The work in typewriting is necessarily closely connected with that of stenography. While the student is learning shorthand theory, he is also learning the keyboard and the use of the various parts of the typewriter. He begins by writing short words, words are followed by sentences, and these by short letters. As soon as the keyboard is mastered, the matter of transcription is taken up, and from this on most of the time is devoted to the transcription of matter from dictation. Through the entire course, neatness and accuracy are strongly emphasized. The touch system is used exclusively.

SPELLING AND PENMANSHIP, ENGLISH AND BUSINESS CORRESPONDENCE.

Same as in business course.

THE SCHOOL OF VETERINARY MEDICINE

L. L. LEWIS, *Dean*

The growing importance of the livestock industry of the State has made a course in Veterinary Medicine a necessity at the Oklahoma Agricultural and Mechanical College. The work is so outlined as to provide a thorough and well balanced course in veterinary medicine, and when completed the degree of Doctor of Veterinary Medicine will be conferred.

The entrance requirements to this course of study are as follows: The completion of a four years' high school course, the completion of the Freshman year in the Oklahoma A. and M. College, or the presentation of credits for an equivalent amount of work.

There are many opportunities in professional and scientific work for young men of thorough training in veterinary science. In order to meet the demands that are made on those entering either the field of private practice or positions requiring technical knowledge, the veterinarian must first have a good general education in addition to the specialized work in veterinary medicine.

Prominent among the fields open to veterinarians of thorough training are:

1. Private practice. There are many good fields for work not only in Oklahoma, but in other Southern States. The growing interest in the South in livestock production will increase the opportunities in this field.

2. Civil Service. Much important work in the United States Department of Agriculture is open only to veterinarians who are graduates from accredited veterinary colleges.

3. State and City Work. The positions of State and Assistant State Veterinarians and municipal food inspectors are open as a rule only to qualified veterinarians. There are also desirable positions as veterinarians in the Army service.

Outline of Courses in The School of Veterinary Medicine, Giving Subjects and Hours

The figures and letters following the departmental name signify the serial number of the subject, and indicate the first (a), second (b), or third (d) term's work in the same subject. The name in parenthesis is the specific name of the subject, and the figures in column at the right of the name indicate the number of hours per week the subject is taught; classroom hours without parenthesis, practicum hours in parenthesis. To graduate, a student must earn credits in all subjects outlined in the course, and must have been registered in The School of Veterinary Medicine three full years. Students completing the Freshman year in any of the other six Schools of the College may enter the Sophomore year in The School of Veterinary Medicine free of all conditions. Military science and drill are required of all male students in the course.

SOPHOMORE YEAR

FALL TERM	WINTER TERM	SPRING TERM
Vet. Med. 5*a*.....3 (6) (Anatomy)	Vet. Med. 5*b*.....3 (4) (Anatomy)	Vet. Med. 5*c*.....3 (6) (Anatomy)
Chemistry 1*a*.....3 (4) (Inorganic)	Chemistry 1*b*.....3 (4) (Inorganic)	Chemistry 1*c*.....3 (4) (Inorganic)
English 2*a*.....4	English 2*b*.....4	English 2*c*.....4
An. Husb. 4.....5 (Feeds and Feeding)	Zoology 1.....3 (4) (General)	Zoology 8.....2 (4) (Embryology)
An. Husb. 1*a*..... (2) (Stock Judging)	Zoology 7*a*.....3 (4) (Histology)	Zoology 7*b*.....2 (6) (Histology)

JUNIOR YEAR

FALL TERM	WINTER TERM	SPRING TERM
Vet. Med. 6*a*.....3 (4) (Anatomy)	Vet. Med. 6*b*.....3 (4) (Anatomy)	Vet. Med. 6*c*.....2 (4) (Anatomy)
Vet. Med. 7*a*.....4 (Materia Medica)	Vet. Med. 7*b*.....4 (Materia Medica)	Vet. Med. 7*c*.....3 (4) (Materia Medica)
Physiology 1.....3 (4) (Advanced)	Vet. Med. 11*a*.....4 (Theo. & Prac.)	Vet. Med. 11*b*.....4 (Theo. & Prac.)
Bacteriology 1.....3 (4) (General)	Vet. Med. 8.....4 (Therapeutics)	Bacteriology 3.....2 (4) (Technical)
Vet. Med. 9.....2 (2) (Parasitic Diseases)	Vet. Med. 10*a*.....2 (4) (Pathology)	Vet. Med. 10*b*.....3 (4) (Pathology)
Vet. Med. 22*a*..... (2) (Clinic)	Vet. Med. 22*b*..... (4) (Clinic)	Vet. Med. 22*c*..... (12) (Clinic)

SENIOR YEAR

FALL TERM	WINTER TERM	SPRING TERM
Vet. Med. 12*a*.....5 (Theo. & Prac.)	Vet. Med. 12*b*.....5 (Theo. & Prac.)	Vet. Med. 12*c*.....5 (Theo. & Prac.)
Vet. Med. 13*a*.....3 (2) (Surgery)	Vet. Med. 13*b*.....3 (2) (Surgery)	Vet. Med. 13*c*.....3 (Surgery)
Vet. Med. 21.....2 (Infectious Diseases)	Vet. Med. 17.....2 (4) (Physiology)	Vet. Med. 14.....5 (Obstetrics)
Vet. Med. 16.....4 (Diagnostic Methods)	Vet. Med. 18.....1 (2) (Horseshoeing)	Vet. Med. 20.....4 (Meat Inspection)
Vet. Med. 15.....2 (Dentistry)	Vet. Med. 19.....2 (Milk Inspection)	Vet. Med. 23*c*..... (12) (Clinic)
Vet. Med. 23*a*..... (12) (Clinic)	Vet. Med. 23*b*..... (12) (Clinic)	

Department of Veterinary Medicine

L. L. LEWIS, *Professor*
C. H. MCELROY, *Assistant*
L. B. RITTER, *Assistant*
W. P. SHULER, *Assistant*
R. O. WHITTENTON, *Assistant*

The equipment to be used for instruction in Veterinary Medicine will include the equipment of the laboratories of Bacteriology, Physiology, Zoology, Chemistry, etc. Such facilities will enable students to undertake their work with all conveniences and equipment afforded by well established courses of instruction.

SUBJECTS

1. ANATOMY.—Junior year, winter term; three hours theory and four hours practicum per week. Optional (Agron. 5, or Dairy. 2, or Hort. 7): Agr.

   A brief study of the anatomy of the horse. One or more dissections will be made during the term.

2. ANIMAL PARASITES.—Senior year, fall term; two hours theory per week. Required: An. Husb. Elective: Agron., Dairy., Hort.

   A continuation of the work in zoology, and designed to cover the general subject of controlling and treating parasitic diseases.

3. MATERIA MEDICA.—Senior year, winter term; three hours theory per week. Required: An. Husb.

   This course is intended to familiarize the student with the most common drugs and their uses. A study of the origin, history and identification of drugs forms a part of the work.

4. ANIMAL DISEASES.—Senior year, spring term; two hours theory and two hours practicum per week. Required: An. Husb.

   This course follows the work in bacteriology, and special attention is given to infectious and contagious diseases. Special attention is given to the care of the common diseases of farm animals.

5*a*. ANATOMY (Osteology).—Sophomore year, fall term; three hours theory and six hours practicum per week. Required: Vet. Med.

   A comparative study of the skeletons of domestic animals.

Instruction in anatomy will extend over a period of two years and is given by lectures, recitations and laboratory work. The laboratory and dissection work is particularly valuable as it gives practical value to the course. In no other way can a thorough knowledge of anatomy be obtained, and every student at some time during the course will be required to dissect all parts of the horse or ox. The work of the first year is devoted to a study of the skeleton, muscles and some of the viscera; the second year to a study of the circulation, nervous system, organs of special sense and surgical anatomy.

5*b*. ANATOMY (Arthrology).—Sophomore year, winter term; three hours theory and four hours practicum per week. Required: Vet. Med.

A study of articulations and ligaments.

5*c*. ANATOMY (Myology).—Sophomore year, spring term; three hours theory and six hours practicum per week. Required: Vet. Med.

Complete dissection of muscles will be made this term. The horse will be used as the type, but comparative studies of other domestic animals will be made.

6*a*. ANATOMY.—Junior year, fall term; three hours theory and four hours practicum per week. Required: Vet. Med.

A complete study and dissection of the circulatory system will be required. Comparative studies will be made.

6*b*. ANATOMY.—Junior year, winter term; three hours theory and four hours practicum per week. Required: Vet. Med.

Dissection and studies of the central and peripheral nervous systems.

6*c*. ANATOMY.—Junior year, spring term; two hours theory and four hours practicum per week. Required: Vet. Med.

This course will require regional dissections and studies with a view to operative surgery. Special emphasis will be given to this course in anatomy.

7*a-b-c*. MATERIA MEDICA.—Junior year, fall, winter and spring terms; fall and winter terms, four hours theory per week; spring term, three hours theory and four hours practicum per week. Required: Vet. Med.

This course extends over three terms of the Junior year. The work in the last term will be largely devoted to pharmacology and a study of biological products that are of importance in the control of animal diseases.

8. THERAPEUTICS.—Junior year, winter term; four hours theory per week.

A thorough study of the application of remedial agents of animal, vegetable and mineral origin. Practice in prescription writing will be given in connection with the work.

9. PARASITIC DISEASES.—Junior year, fall term; two hours theory and two hours practicum per week. Required: Vet. Med.

This course deals with animal parasites, their distribution and means employed to combat them.

10*a*. PATHOLOGY.—Junior year, winter term; two hours theory and four hours practicum per week. Required: Vet. Med.

This is a general course in pathology. Particular stress is placed on laboratory technique in demonstrating the various morbid processes in tissues.

10*b*. PATHOLOGY.—Junior year, spring term; three hours theory and four hours practicum per week. Required: Vet. Med.

The work in the spring term is a continuation of the work of the winter term, questions of pathological physiology and chemistry being considered in this term.

11*a-b*. THEORY AND PRACTICE.—Junior year, winter and spring terms; four hours theory per week. Required: Vet. Med.

A study of sporadic diseases is first taken up. The various methods of diagnosis are taken up in a systematic manner and practical application of these methods made on different species of animals.

12*a-b-c*. THEORY AND PRACTICE.—Senior year, fall, winter and spring terms; five hours theory per week. Required: Vet. Med.

The infectious diseases are taken up and studies made of sanitary regulation and control. The numerous contagious and infectious diseases of cattle, sheep and hogs will be taken up systematically, and students will be required to study carefully the extensive literature on this subject.

13*a-b-c*. SURGERY.—Senior year, fall, winter and spring terms; fall and winter terms, three hours theory and two hours practicum per week; spring term, three hours theory per week. Required: Vet. Med.

The instruction in this very important branch of veterinary medicine is given in a graded course. The work begins with the simple work of remedying some of the dental defects, dressing of wounds, followed by the simpler operations and animal restraint. The latter part of the year's work is devoted to studies in general surgery. The work is well illustrated by clinical material.

14. OBSTETRICS.—Senior year, spring term; five hours theory per week. Required: Vet. Med.

After a brief review of obstetrical anatomy the work is devoted largely to a consideration of the diseases affecting these organs and the treatment of conditions incident to parturition.

15. DENTISTRY.—Senior year, fall term; two hours theory per week. Required: Vet. Med.

In the clinical work in the Junior year, students have become familiar with the more common defects of the teeth and means of remedying these. In the Senior year a thorough study is made of complications arising from teeth, and operative procedures for remedying these conditions.

16. DIAGNOSTIC METHODS.—Senior year, fall term; four hours theory per week. Required: Vet. Med.

The entire subject of diagnostic methods is reviewed at this time. Laboratory diagnosis and technique as well as physical diagnosis is considered, and as much practice as possible is given in the clinical work.

17. VETERINARY PHYSIOLOGY.—Senior year, winter term; two hours theory and four hours practicum per week. Required: Vet. Med.

This subject deals with veterinary physiology, the laboratory work, being largely along the lines of laboratory work on the various body fluids and secretions and comparative physiology of the various groups of domestic animals is considered briefly.

18. HORSESHOEING.—Senior year, winter term; one hour theory and two hours practicum per week. Required: Vet. Med.

This work includes balancing and shoeing for particular purposes. Much clinical material is available and the work is particularly important to men concerned with city practice.

19. DAIRY AND MILK INSPECTION.—Senior year, winter term; two hours theory per week. Required: Vet. Med.

The importance of sanitary conditions surrounding the production of milk is fully recognized, and this work will familiarize students with the high standards set by many cities and markets for dairy products. Students will determine the composition of the various dairy products and familiarize themselves with the means of detecting adulterations.

20. MEAT INSPECTION.—Senior year, spring term; four hours theory per week. Required: Vet. Med.

This work is very important to veterinarians and particularly those contemplating entering the inspection service of the Government. The nearness of packing plants in the State offers good opportunities for observing practical work in this line.

21. INFECTIOUS DISEASES.—Senior year, fall term; two hours theory per week. Required: Vet. Med.

This course covers thoroughly regulative measures for control of animal diseases. A study is made of the manner of spread and biology of infecting agents.

22a-b-c. CLINIC.—Junior year, fall, winter and spring terms; fall term, two hours practicum per week; winter term,

four hours practicum per week; spring term, twelve hours practicum per week. Required: Vet. Med.

This work is the practical side of any course in veterinary medicine. The varied material available gives good opportunities for this work. Students will be required to take charge of cases and keep records so as to learn in a practical way the progress of cases and use of remedies suitable to various stages of the disease. Written reports are required, and a student is graded on proficiency in this as in all other work.

23*a-b-c*. CLINIC.—Senior year, fall, winter and spring terms; twelve hours practicum per week. Required: Vet. Med.

A continuation of clinical work begun in Junior year.

OTHER DEPARTMENTS

Sub-Freshman Department

S. A. MARONEY, *Principal*
J. H. CALDWELL, *Assistant*
J. O. MUNCIE, *Assistant*
CAROLYN ISABEL BABB, *Assistant*
P. J. DAVIS, *Assistant*

The Sub-Freshman Department has for its purpose the preparation of students for entrance to the Freshman year and provides some industrial training. For entrance requirements see page 15. Following is an outline of the work given:

Outline of Course in Sub-Freshman Department Giving Subjects and Hours

FALL TERM		WINTER TERM		SPRING TERM	
English	5	English	5	English	5
Algebra	5	Algebra	5	Algebra	5
Ancient History	4	Medieval History	5	Arithmetic	5
Physiology	3	Arithmetic	4	Drawing	(2)
Ethics	1	Penmanship	(1)	and	
Penmanship	(1)	Spelling	(1)	Woodwork	(2)
Spelling	(1)	Etymology	(4)	Etymology	(4)
Ele. Agriculture	(4)	or		or	
or		Drawing	(2)	Ele. Agriculture	(4)
Drawing	(2)	and		Penmanship	(3)
and		Woodwork	(2)	Spelling	(2)
Woodwork	(2)	Physical Training		Physical Training	
Physical Training					

SUBJECTS

ENGLISH.—Fall, winter and spring terms; five hours theory per week. Required.

The work of the fall term comprises a comprehensive review of English grammar, together with a study of capitalization and punctuation. In the winter term special attention is paid to letter forms and paragraphing. Short themes are required twice a week. About three short English classics are studied. The spring term is devoted to themes and short classics.

ALGEBRA.—Fall, winter and spring terms; five hours theory per week. Required.

The main purpose of the elementary course is the solution of practical problems, rather than the construction of a purely theoretical doctrine as an end in itself. The course includes an introduction to the equation, positive and negative numbers, involved number expression, simultaneous equations, graphic solution of problems and quadratic equations. The standard of thoroughness

is high in both algebra and English, but strong students do the work in one year. Some require two years.

PHYSIOLOGY.—Fall term; four hours theory per week. Required.

A thorough elementary course in physiology given in lectures and recitations, supplemented by the use of models, skeleton and charts. Notebooks are kept and notemaking is taught as basis for subsequent science work.

ANCIENT HISTORY.—Fall term; four hours theory per week. Required.

The story of the careers of the great men and women of antiquity and of the rise and fall of the ancient nations and civilizations to 476 A. D., with special emphasis upon the contributions that Greece and Rome have made to modern civilization.

MEDIEVAL HISTORY.—Winter term; five hours theory per week. Required.

The course recounts the beginnings of modern Europe out of the ruins of the ancient world; the development of the great institutions of the church, of feudalism, and of the culture and customs of the Middle Ages to the Renaissance and the discovery of America.

ARITHMETIC.—Winter and spring terms; winter term, four hours theory per week; spring term, five hours theory per week. Required.

This is high school arithmetic. The operations and their applications are mastered. Language and the mental methods of the student are objects also. Coming after one term of algebra, use is made of equations.

ETYMOLOGY.—Winter and spring terms; four hours practicum per week. Optional: Winter term with Drawing and Woodwork; spring term, with Elementary Agriculture.

A study of word building by the use of prefixes, suffixes and roots from the Latin, Greek and Saxon elements of English. Spelling, vocabulary and insight of language are the objects.

DRAWING AND WOODWORK.—Fall, winter and spring terms; four hours practicum per week. Optional: Fall term with Elementary Agriculture; winter term with Etymology. Required: Spring term.

This is freehand from models which are used in the woodwork lesson following. The articles drawn and made are, preferably, some useful household objects, as footstools, shelf bracket, or rollingpin. These lessons alternating thus are closely correlated under the social impulse to make something useful. The drawing and woodwork each are two hours a week and are taught by the Art Department and the Engineering Department of the College. The best results are obtainable under these conditions. Some of the classes take this through fall and spring, the others through winter and spring terms.

Elementary Agriculture.—Fall and spring terms; four hours practicum per week. Optional: Fall term with Drawing and Woodwork; spring term with Etymology.

This is a practical course involving elementary physics, chemistry, botany and agriculture. It includes gardening and floriculture, taught by an expert in school gardens. Each student cultivates a small plot for himself. The work is differentiated for boys and girls. About one-third of the class takes it in fall term and the others in the spring term.

Penmanship.—Fall, winter and spring terms. Fall and winter terms, one hour practicum per week; spring term, three hours practicum per week.

Class taught by expert instructor in penmanship of the Business Course.

Spelling.—Fall, winter and spring terms. Fall and winter terms, one hour practicum per week; spring term, two hours practicum per week.

Rigid standard of work, including spelling, diacritical marks and phonetics.

Ethics.—Fall term; one hour theory per week.

All sections meet in Chapel for departmental announcements, class business, and lectures by Senior members of the College Faculty. Each student is required to write up the lecture under the direction of the instructor in English. The aim is to guide the young student in conduct, in habits of study, and in general College activities, and thus promote his efficient College life.

Department of Music

Joseph Watson, *Director; Instructor in Voice Culture and Public School Music*
Jane Porter Sloss, *Instructor in Piano and Music Theory*
Roberta Burgess, *Assistant in Piano and Music Theory*
Mary Mitze, *Assistant in Piano*
Theo. Chr. Rude, *Instructor in Stringed Instruments*
Clark M. Porter, *Instructor in Wind Instruments and Bandmaster*

Music makes broad claims upon the attention of students because of its generally recognized educational value, its cultural influence on the home life of the people, and its professional claims upon the more talented students of music. The instruction in this Department tends toward the musical education and training of a large portion of the student body and free instruction is offered all who desire to select music, provided satisfactory progress is made from month to month in the subject.

Students in the Music Department have access to all classes in the several Departments of the College and to enhance their gen-

eral culture, are required to take at least two or three studies throughout the school year, other than the work required in the regular music courses.

Accomplished musicians are always in demand as directors, singers, teachers, accompanists and organists for church, concert and public school music work. The Music Department offers earnest students the opportunity to acquire scholarly musicianship.

The following courses enable the student to obtain a comprehensive and practical knowledge of music and to acquire skill and power in interpretation. The time required for completing a course will depend upon previous preparation, the talent, ability and character of the work of each student, but all have the privilege of advancing as rapidly as is consistent with good work.

COURSES IN VOICE CULTURE

ELEMENTARY.—Two lessons per week; vocal sight reading and ear training two hours per week.

Exercises are given for deep breathing and breath control; for purity of production, freedom of action and blending of the registers, correct attack and resonance, pure vowel production and distinct articulation. Choir and chorus practice throughout the year.

INTERMEDIATE.—Two lessons per week in voice, vocal sight reading and ear training two hours per week. Choir and chorus practice throughout the year.

This course gives great attention to tone placing, elements of style and phrasing, stacatto, legato and portamento delivery, and exercises tending to the greater flexibility of the voice. Songs of medium grade freely used.

ADVANCED.—Two lessons per week in voice. Two lessons per week in harmony. Choir and chorus practice throughout the year.

This course is devoted to a study of tone color, agility, and all musical ornaments—trill, turn and grupetta, appogiatura, acciaccatura, mordente—mezza-di-voce, phrasing and style, and advanced teaching by means of difficult exercises and songs, recitatives and arias from opera and oratorio.

All students in the elementary voice class must attend the sight-reading class unless excused by the Director; the choir and chorus work, with attendance at all recitals, is required of every student. When requested, students in any grade must sing in recital and from memory.

COURSE IN PUBLIC SCHOOL MUSIC METHODS

This course is carefully classified for each of the grades in the public schools, the work being carefully outlined to develop the vocal ability and musical education of the pupils to suit the particular condition of the mind and the voice of the child at the average age in each grade. This outline is somewhat as follows:

Rote songs for little folks. Study of "staff", "notes", "scale". Location of "do", or the keynote, in nine different keys. Sight reading and singing, by syllable and by letter. Much attention given to tone quality and rhythm. Complete analysis of songs—as to key signature, meter signature, tempo signs, marks of expression, the different values of notes used, etc. Written work from oral dictation of tones, syllables, or letters. Written work from dictation of rhythm. Transposition of songs into different keys. Special practice in music class conducting. Singing at sight, rounds, and 2, 3 and 4-part songs. Thorough practice writing and singing major, minor and chromatic scales. "Spelling" and "pronouncing" different triads or chords. A little study of the elements of harmony.

PIANOFORTE COURSE

ELEMENTARY.—Piano—Two lessons per week. Theory of music one lesson per week.

Hand formation, finger exercises, scales, arpeggios and elementary studies, etc. Sonatinas and pieces of Kuhlau, Clementi, Loeschorn, Reinecke, Schumann, etc.

INTERMEDIATE.—Piano—Two lessons per week. Theory of music one lesson per week.

Technical exercises, scales, arpeggios and octaves. Study of Czerny, Cramer, Clementi, etc. Pieces by Mozart, Haydn, Bach, Schumann, Grieg and other modern composers.

ADVANCED.—Piano—Two lessons per week. Harmony one lesson per week.

Studies by Clementi, Henselt, Moszkowski, Tausig, Chopin, Moscheles, etc. Pieces by Bach, Beethoven, Chopin, Schumann, Liszt, Mozart, Rubinstein and modern composers.

THEORY OF MUSIC

This course comprises studies in the following: Notation, scales, rhythm and accent, musical terminology, intervals, chords and cadences, inversions, natural and artificial groupings and musical ornaments. The advanced theory will deal with harmony, concluding with form and composition.

VIOLIN COURSE

ELEMENTARY.

Careful attention given to proper position of holding the violin and bow. Elementary violin lessons from modern methods.

Scales and chords from first to third positions. Studies by Wohlfahrt, Tours, Sevcik, Grun and Scholz, Kayser, etc. Pieces and ensemble. Music theory.

INTERMEDIATE.

Major and minor scales in all positions. Studies by Mazas, Alard, Sevcik and Kreutzer. Pieces by Leonard, Weiniawski, Vieuxtemps, etc. Sonatas by Corelli, Tartini, Handel, Mozart and Beethoven. Easy concertos by modern composers. Sight playing, orchestra, string quartet, and Music Theory class.

ADVANCED.

Technique by Sevcik, studies by Kreutzer, Fiorillo, Rode. Concertos by Viotti, Rode, Kreutzer, Bruch, Saint-Saens, etc. Orchestra, ensemble, string quartet, class, and Music Theory.

VIOLA, VIOLONCELLO AND CONTRABASS COURSE.

These instruments may be studied by similar grades to those in the violin course, or may be carried only up into the Intermediate Grade. Pupils having reached a fair degree of proficiency on any stringed instruments are required to play in the regular College orchestra.

COURSE IN WIND INSTRUMENTS

Students wishing to take lessons on any wind instrument receive two lessons per week on instruments, two years theory, one year harmony, analysis, counterpoint, orchestration and arranging for military band.

THE BAND.

Instruction will be given by regular College band leader in the use of brass, wood-wind and percussion instruments. To become a member of the College band the student must pass a satisfactory examination before the Director as to knowledge of music and ability to perform on certain instruments before securing recommendation to the President for transfer to the band. The members are required to attend practice three times per week and to perform in public by authority of the President. There is no charge for instruction in the band. The College furnishes instruments, music and music stands to members of band and orchestra. Other students pay one dollar per month in advance for instruments used in practice when furnished by the College. Those desiring private lessons in band instruments will consult with the Director of the Department.

THE ORCHESTRA.

Any College student who plays on any string or wind instrument has the privilege of the orchestra on approval by the Director of Music.

Department of Physical Training for Men

John Corbett, *Director*
P. J. Davis, *Assistant*
Claude Allen, *Assistant*

Much of the success of a young man or woman in college and in life after graduation depends on good health. The Oklahoma A. and M. College believes in the old adage, "A sound mind in a sound body". The Department of Physical Training aims to create and maintain a vigorous state of health in every student in the College, and its work is so diversified that it meets the individual needs. It strives to keep the student body in the best possible physical condition, for and during their college course, and to lay the foundation for proper living and care of the body.

The Men's Gymnasium is a large, well lighted room 40x60 feet and contains all of the necessary apparatus for gymnasium work of all kinds. The outfitting is done with the idea of giving the student the advantages to be found in any well regulated college gymnasium. Dumbbells, barbells and Indian clubs will be found there in plenty for mass class drills, and of the heavier apparatus there are the flying rings and traveling rings, the horse, the horizontal bar, the parallel bars, mats, jumping standards, etc. Boxing gloves and fencing foils are also supplied to those desiring to enter into this special work.

In direct connection with the gymnasium is a large locker room with 400 steel and wooden lockers, benches, and a well equipped shower room with eight showers for hot and cold baths.

Every student in the College is expected to do some work to keep himself in the best possible physical condition.

Students of the Freshman and Sub-Freshman classes, Business and Short Courses are required to do a certain amount of work, for which they receive credit necessary for graduation. There are also classes organized for the other students of the College.

An athletic field for football, baseball and track and field athletics is provided by the College and maintained by the Athletic Association. Students are encouraged to take part in athletic and out-of-door sports. College and class teams are organized and

maintained by the Athletic Association, and each team is under the supervision of a trained instructor.

Athletics are a part of the physical training work, but whether a student participates in them or not is optional. No student is allowed to become a member of a team until he has been examined by the Director and proven that he is physically fit. A high standard of scholarship is also required of all members of the College teams.

Each student in the Men's Department must provide himself with a gymnasium suit so that there can be a complete change of clothing after the physical training work. This suit consists of a sleeveless shirt (white or black), running trousers and soft-soled shoes. These can be procured at a local store at a cost of not to exceed $3.00.

COURSES FOR MEN

PHYSICAL EXAMINATION.—Preliminary.

A thorough physical examination is required of all entering students. This examination consists of measurements, strength tests, examination of the eyes, ears, nose, throat, lungs, heart and other vital organs, and special stress is laid upon physical deformities and inequalities. These defects are pointed out to the student and exercises to correct them are prescribed. Where necessary special attention and advice are given to the student. An examination is taken at the beginning and at the end of the first year, and at the end of each year after that.

A Gymnasium Handbook, containing chapters on Personal Hygiene, Diet, Exercise, Prescription, Injuries and an Anthropometric Table is given to each student, who is required to plot his measurements and, with them as a guide, work toward improved physical condition and health. Upon the completion of the gymnasium course the book becomes his property.

COURSE 1.—Required of the Sub-Freshmen of the College; fall, winter and spring terms. Introductory.

This work consists of free exercises, games, athletic dances and mass class drills with dumbbells and barbells, with deep breathing and abdominal mat work. Elementary apparatus work is given on the horse and parallel bars during the fall and winter terms, and is replaced during the spring term by out-of-door track and field athletic work. Tennis and baseball are also substituted. Three hours' work a week. Credit given, and required for graduation.

COURSE 2.—Required of Freshmen of the College; fall, winter and spring terms.

The work of the Freshman classes consists of games, athletic

dancing, boxing, wrestling and mass class drills with the dumbbells, barbells and Indian clubs, with elementary apparatus work on the flying rings, horizontal bar, and advanced work on the horse and parallels. In the spring term the out-of-door work of Course 1 replaces the apparatus work. Part of the work of the Freshman year, fall and winter terms, is theoretical. This consists of lectures, recitations and examinations in Personal Hygiene and First Aid to the Injured. Not more than one hour per week will be given to this lecture work. Three hours a week. Credit given and required for graduation.

COURSE 3.—Required of students of the Short Course in Agriculture; fall and winter terms.

The work of this class consists of mass drills and light elementary apparatus work, and will deal more with the coordinative side of physical training than the developmental. The class is maintained during the fall and winter terms only. Two hours work a week. Credit given and required for graduation.

COURSE 4.—Required of students of the Business Course; fall, winter and spring terms.

The work of this course is somewhat similar to Course 1, but more advanced. It consists of mass class drills and apparatus work of the heavier type. During the spring term the out-of-door work of Course 1 replaces the indoor work. Three hours a week. Credit given and required for graduation.

COURSE 5.—Special Classes. Open to all students.

A. Cross-country running. During the fall and spring terms those students desiring to do so may substitute a certain amount of cross-country running for the regular gymnasium work.

B. Wrestling. A class in wrestling, in which all of the holds, breaks and counters are given, is formed. A student may substitute one hour's work a week in wrestling for one hour of his regular class work. Winter term only, one hour per week.

C. Boxing. A class in boxing, in which all of the blows, parries, guards and counters are given, is formed. A student may substitute one hour's work in boxing for one hour of his regular class work. Winter term only, one hour per week.

D. A class in fencing. Open only to upperclassmen, with the consent of the Director.

E. Special Class. A special class is formed for those who, on account of deformities, are unable to take the regular work of the Department. The work of this class is suited to the needs of the individual.

F. Individual corrective work for all students who show in their examination the need of such work. The idea of this work is to correct deformities so that the student may get the maximum value from the regular class work.

G. A class is organized and maintained for Sophomore, Junior and Senior students. Meets twice a week. This work is optional with the students.

NOTE.—A student may take any or all of the special work, but only one hour of substitution will be allowed.

COURSE 6.—Advanced Gymnastic Class. Open to all students.

A special class is formed for students who desire to do advanced work on the horse, parallel bars, horizontal bars, flying rings, mats, tumbling and club swinging, and for the leading of gymnasium squads. This comprises the regular gymnasium team for exhibition purposes. Three hours work per week.

COURSE 7.—Open only to Seniors.

This course consists of theoretical and practical training in Physical Training and Secondary School athletics. It is intended for those students who expect to teach and who desire to handle such work in high or secondary schools. The work consists of lectures and practical instruction on the athletic field and gymnasium floor. Three hours per week, Senior elective. Fall, winter and spring terms. Given only on recommendation of the Director and by action of the Faculty.

NOTE.—Preceding Courses 1, 3 and 4 a few minutes' talk is given before each lesson on some phase of personal hygiene with the idea of helping the student in his daily life.

ATHLETIC.

Teams are maintained in football, baseball, track and basketball. During the time any student is a member of one of the above teams he will be excused from all gymnasium work and will be given credit therefor.

Department of Physical Training for Women

ANNA MILLER, *Director*
MARY BARLOW, *Assistant*

The new Woman's Gymnasium, located in the Woman's Building, is an unobstructed room 32x63 feet, and is equipped with all of the modern gymnasium apparatus. There is a locker and dressing room in connection, supplied with a large number of steel lockers. There are also shower baths. In the rear of the building are the woman's outdoor tennis courts.

A regular costume is required. In order that these may be uniform in pattern and color, they are ordered by the College. The cost of the suit, including shoes, is about $6.00.

At the beginning of the fall term each young woman is given a careful examination. Personal history, measurements, deformities, are taken and recorded, with an examination of the vital organs. This examination is repeated during the spring term and comparison made at both examinations with the average. Suggestions and prescriptions suited to the needs of the individual are based upon this examination.

COURSE 1.—Required of members of the Sub-Freshman, Business and Short Course classes. Introductory. Three hours a week.

The work of these classes consists of floor work, emphasizing carriage and coordination of muscles. Movements with apparatus, progressive back and abdominal exercises, Indian clubs, military marching and gymnastic games are given.

COURSE 2.—Required of members of the Freshman class. Advanced. Three hours per week.

This course consists of floor work, apparatus with more advanced work than Course 1; vaulting horse, buck, vaulting box, boom, marching and gymnastic games.

COURSE 3.—Required of members of the Sophomore class.

Indoor and outdoor games, Swedish gymnastics.

COURSE 5.—Corrective Gymnastics.

For those unable to take the work of the regular required courses, this course will be substituted. Hours to suit.

COURSE 6.—Massage, Medical Gymnastics and theory. This course is especially planned for teachers and is considered from three points of view.

A. Massage, medical gymnastics. Methods and exercises used for corrective and therapeutic purposes. A general treatment massage is given. In specific cases, insufficient osseous development, fractures, dislocations, sprains, muscular rheumatism, colds, insufficient respiratory power, neurasthenia, neuralgia headache and indigestion are discussed.

B. Schoolroom gymnastics. Gymnastic exercises, games and simple folk dances for all grades, adapted to meet the conditions of the schoolroom.

C. Children's singing games. This includes traditional games and song plays, games of imitation, gesture, choosing and catching, games which appeal to the young by the stirring energy of their movement and their imaginative pantomine.

COURSE 7.—ATHLETICS.

A. Basketball. Each class has a basketball team, and an interclass schedule is played.

B. Field hockey and cross-country walking. Open to all classes during the months of October, April and May.

C. Tennis. Tennis is played on the College courts during favorable weather. A tennis club is formed which is under the direction of the Girls' Athletic Association. The club is open to all girls of the College. The dues are 50 cents per year.

D. May Festival Dances. For the May Festival each year the Girls' Athletic Association gives a May pole dance, composed of the rhythmical games taught in the gymnasium throughout the school year.

Military Department

GEORGE W. EWELL, *Commandant*
First Lieutenant, 3d Infantry
M. MCDONALD, *Assistant*
Sergeant Major, Retired, U. S. A.

This institution, being one of the beneficiaries of the Act of Congress of 1862, instruction in military tactics is made compulsory.

The Department is in charge of an officer of the United States Army, detailed by the War Department, as professor of Military Science and Tactics.

Military discipline is exercised with firmness, kindness and justice. It tends to cultivate habits of punctuality, alertness and the sense of personal responsibility. It also teaches attention to details, cleanliness of dress and person, a high sense of honor and respect for those in authority.

It helps the student to prepare himself the better for any position in life, because employers like to find men who are imbued with the idea of doing exactly as they are instructed by one authorized to direct them, and who have been trained to exercise quick yet sound judgment in any emergency that arises concerning which they have no definite instruction. These qualities are thoroughly inculcated in any person by a military training such as this College endeavors to give. In addition, the drills give a graceful carriage to the student, assist in the promotion of the health of the individual, and are an added benefit to the gymnasium work of the College.

Former President Taft, on February 25, 1911, following a review of 1,400 cadets at the University of Illinois, wrote as follows to the President of that institution: "We are all in favor of college athletics, but one of the defects of athletics is the tendency to confine work to those who are naturally best adapted to it, while the great student body takes no active part in the games. This is not true of military training that comes from the organization and maintenance of a school regiment."

The course of instruction is made to conform strictly to the provisions of General Order No. 231, War Department. In com-

pliance with the requirements of that order, the course is both practical and theoretical, and will be applied as follows:

PRACTICAL

1. Infantry Drill Regulations, through the School of the Regiment, in close and extended order.
2. Advance and rear guard, and outposts.
3. Marches, map making, entrenchments.
4. The ceremonies of review, inspection, parades, escort of the colors, guardmounting, etc.
5. Gallery practice.
6. Target practice.
7. Field problems with blank ammunition.

All students, not physically disqualified, are required to drill. During the fall term there will be three drills per week, while the winter and spring terms will be devoted to two drills with one hour's instruction in Military Science in the subjects as set forth in the following table:

THEORETICAL—MILITARY SCIENCE

1. Infantry Drill Regulations, U. S. Army, 1911.
2. Provisional Small Arms Firing Manual, 1909.
3. Field Service Regulations, U. S. Army, 1910.
4. Manual of Guard Duty.
5. Outlines of First Aid to the Injured.
6. Lectures on various military topics.

Satisfactory completion of the prescribed work is required before graduation.

Students entering from other institutions where officers of the army are detailed will be given credit for any theoretical work for which they hold certificates, provided they are not afterward found deficient in the practical work of the subject.

EQUIPMENT

The War Department has supplied the College with 560 U. S. magazine rifles, caliber .30, of the Krag-Jorgensen pattern, and 600 sets of infantry equipment. Swords, target supplies and annual issues of ball, blank and gallery cartridges are also received from the War Department.

Two uniforms will be used. One consists of blouse, breeches and hat, and the other of the same cap and breeches, but with a blue chambray shirt instead of the coat. The coat, breeches, hat and two shirts cost $16.55 for season of 1913-14. With the uniform, tan high shoes must be worn at all times. A white military collar is required when the coat is worn. White gloves are required when under arms.

The uniform will give more wear than a civilian suit costing the same amount. It is made of an excellent grade of 16 and 18-ounce woolen goods of olive-drab color. Each suit is tailor made to individual measure, and a correct fit is guaranteed by the contractor and must meet the approval of the Commandant.

ORGANIZATION

All young men are required to enroll in the Military Department.

The Corps of Cadets has been organized into a regiment consisting of a band and two battalions of four companies each. Officers whose service has been satisfactory are given a genuine parchment commission on their graduation.

Upon the graduation of each class, the names of such students as have shown special aptitude for military service are reported to the Adjutant General of the army and to the Adjutant General of their State. Graduates of the A. and M. College are admitted to the U. S. Military Academy without taking the mental examination.

Roster of Corps of Cadets

Commandant of Cadets

GEORGE W. EWELL
First Lieutenant Third Infantry

Assistant Commandant of Cadets

M. McDONALD
Sergeant Major, U. S. Army, Retired

Regimental Staff

Captain and Regimental Adjutant, JOHN G. SMITH.

Captain and Regimental Quartermaster, A. F. WHIPPLE.
Regimental Sergeant Major, ELWIN J. SMITH.
Regimental Quartermaster Sergeant, J. T. TINGLE.
Regimental Color Sergeant, SAM J. KREPPS.
Regimental Color Sergeant, EMERY WILLIAMSON.

Regimental Band

Leader, PROFESSOR CLARK PORTER, *Department of Music*
Chief Musician: MILTON B. CAMPBELL.
Principal Musician: GEORGE G. DEBORD.
Drum Major: JESSE H. EPPERSON.
Sergeants: O. I. WISE.
P. K. ANDERSON.
H. J. CLEMMER.
H. L. PECK.
D. S. GRAHAM.
O. C. BROWN.
CARL RUSSELL.
Corporals: J. M. FISHER.
C. M. LOVELL.
JULIAN CONN.
W. H. PATTERSON.
CLYDE MULLEN.
R. E. THOMPSON.

Best Drilled Company in Regiment

Company "H", under the command of Captain F. G. Drummond, won the special saber, which is presented annually for the best drilled company. The name of this company and the name of the captain will be engraved on a silver band, which will be put on the pike of the College flag.

FIRST BATTALION

MAJOR F. G. DRUMMOND, Commanding Battalion — FIRST LIEUTENANT and BATTALION ADJUTANT, G. B. DUNLOP

	COMPANY A	COMPANY B	COMPANY C	COMPANY D
Captain	L. D. HUFFMAN	R. A. WOOD	LOUIS BRANNIN	HARRY ROESER
First Lieutenant	J. S. CONNELL	W. E. HAGAR	M. E. OLMSTEAD	W. E. JACKSON
Second Lieutenant	E. W. SIMANK	DELARUE BAKER	A. A. DRUMMOND	E. B. DALE
First Sergeant	GUY MANTLE	J. L. ROBINSON	R. O. BROGELMAN	J. C. WOODSON
Sergeants	CECIL KNOBLOCK R. SCRIVENER G. R. CHOATE H. H. SHILLER	V. R. WITTICH H. NEEDHAM LOYD MARX E. A. KISSICK	W. RAPP R. V. MCBRIDE W. T. PAYNE W. MARKER	R. B. BARR L. E. WOODWORTH CLARENCE ROBERTS C. N. JORDAN
Corporals	E. L. GARRETT R. M. FAIR C. A. WILLIS R. R. KIRCHNER E. E. GRAHAM H. D. VENTERS	E. KILE A. WOOLARD H. D. MURPHY CHAS. ELROD R. HAVENSTRITE	J. JARRETT W. L. IKARD R. KILPATRICK G. L. CRAWFORD CHAS. FORNEY	J. CARTER G. G. HAYS E. E. IVES W. B. ELSTON F. F. FOSTER

SECOND BATTALION

MAJOR ORIS H. REYNOLDS, Commanding Battalion — FIRST LIEUTENANT and BATTALION ADJUTANT, ERNEST WHITLOCK

	COMPANY E	COMPANY F	COMPANY G	COMPANY H
Captain	E. B. REYNOLDS	D. L. MANTLE	QUENTIN GRAHAM	H. D. BARNES
First Lieutenant	A. C. BRODELL	J. J. GETGEY	W. G. FRIEDEMANN	H. F. WEBB
Second Lieutenant	R. F. SHIFLETT	J. R. REEVES	I. F. HUDDELSON	A. R. SMITH
First Sergeant	A. A. ANDERSON	A. O. HESTON	T. FRIEDEMANN	S. KELLEY
Sergeants	V. NORMAN J. MITCHELL M. F. HAMILTON E. L. SPENCER	R. M. ROSE H. E. JOHNSON M. ANDREWS L. S. WORTMAN H. DOTY	WILEY SCOTT C. C. COBB B. O. SIMANK E. R. CASS	J. T. BLACKBURN F. S. REYNOLDS O. ABERNATHY G. E. DAVIS
Corporals	A. W. HARDY W. G. THOMPSON O. C. BOYD JOE BUTLER K. FELLOWS	R. BROEMEL ROY HOKE B. A. WATSON M. G. HARNDEN P. H. LOWERY	R. FREEMAN R. T. BEST R. L. GRIFFITH R. L. ANDERSON H. C. BOYD	V. CALDWELL H. WIGGS PAUL ORR CHAS. BAUMAN

COLLEGE EXTENSION DIVISION

B. C. PITTUCK, *Dean*

The College Extension Division embraces the work of four Departments in the College—Agricultural Extension, Agriculture for Schools, Boys and Girls Clubs, and College Publications. Practically all Departments in the College, and more especially the Agricultural Departments, cooperate with this Division from time to time. Through this Division the College is extending the benefits of its working equipment—Faculty, officers, equipment by Departments, and results of experimental investigations—to the State as a whole by giving instruction and disseminating information to people who are not resident students. During the fiscal year ended June 30, 1913, members of the Faculty and officers of the College visited seventy-five counties, and at meetings of various kinds lectured and demonstrated on subjects relating to agriculture, home economics and rural affairs. The total attendance at all meetings attended during the year was 186,945, an increase of more than 48 percent over the preceding year.

Many organizations that are more or less interested in the development of the agricultural resources of Oklahoma are actively supporting the work of this Division. Bankers and business men's organizations, teachers, ministers of the gospel and other agencies, as well as those who are directly concerned, are giving larger attention than ever before to the problems of the farm and the home. These factors, in their several spheres of influence, are earnestly, honestly and substantially aiding the College in the movement for a better and more profitable agriculture.

The service rendered to the people by this Division has been made more efficient and its influence more widespread by the cooperation and assistance of the several Schools of the College, the Board of Agriculture, the Corporation Commission and the railroads. But for these much of the work already done would have been impossible.

Department of Agricultural Extension

B. C. PITTUCK, *Dean, in Charge*
A. C. HARTENBOWER, *Principal Short Courses*

The Department of Agricultural Extension, during the fiscal year ended June 30, 1913, gave instruction to more than one hundred and seventy-five thousand persons residing without the limits of the College campus. Special lectures and demonstrations were given at sixty-eight organized farmers' meetings, four special agricultural trains were operated, and one State Fair School, five Encampment Schools, and eighteen short courses were held during the year. In addition to these lectures and demonstrations the Department supplied forty-eight State, county and local fairs with expert judges of livestock, farm crops and home economics exhibits. Educational exhibits were also prepared for these fairs, agricultural trains and short courses.

With all the Departments of The School of Agriculture of the College lending their support to this Department, it was unable to meet all the demands made upon it in 1912-13, and many urgent requests for assistance were denied.

The plans for 1913-14 have been better correlated and a more efficient service will be rendered this year. The Department is planning to place a number of traveling libraries over the State. The books in these collections have been carefully selected by competent authorities. Special illustrated lectures on topics of statewide interest are being prepared for circulation among the schools of the State and other interested organizations. A carefully arranged syllabus will be furnished with each set of slides.

This Department will be pleased to hear from all persons and organizations interested in the development of agricultural conditions in Oklahoma.

Department of Agriculture for Schools

JOSIAH MAIN, *Professor*
G. W. BARNES, *Assistant*

Oklahoma recognized the importance of teaching practical and industrial subjects in the common schools when at statehood the following clause was inserted in its Constitution:

> "The Legislature shall provide for the teaching of agriculture, horticulture, stock feeding and domestic science in the common schools of the State."

In vitalizing this provision of the Constitution, the First State Legislature provided that —

> "The elementary principles of agriculture, horticulture, animal husbandry, stock feeding, forestry, building country roads, and domestic science, including the elements of economics, shall be embraced in the branches taught in all the public schools of this State, receiving any part of their support from this State, and these branches shall be as thoroughly studied and taught by observation, practical exercises, and the use of texts and reference books, and in the same manner as are other like required branches in said public schools."

And—

> "The Agricultural and Mechanical College shall be the technical head of the agricultural, industrial and allied science system of education . . ."

In order to properly and systematically carry out this statute the Legislature further provided that—

> "There is hereby created the Chair of Agriculture for Schools, who shall be a member of the Faculty of the Agricultural and Mechanical College, whose duty it shall be to direct and advise in all matters relating to the teaching of agriculture and allied subjects in the common schools, under the supervision of the President of the Agricultural College."

The foregoing quotations clearly indicate the purpose of the Department of Agriculture for Schools. A detailed study is being made of the problems of teaching agriculture, domestic science and allied subjects in the common schools, and these schools throughout the State are supplied with suggestions relative to the operation of industrial branches. The Department is in constant communication with county superintendents of public instruction, superintendents of city schools, teachers and members of school boards. Two-day schools of agriculture and domestic economy are held annually in conjunction with county teachers' summer normal institutes in each of the five Supreme Court Judicial Districts. Lecturers are provided teachers' meetings and associations. Representatives of the Department visit schools and carry on one full day's work at each place with agriculture and domestic science and assist in installing permanent industrial features. Popular bulletins are issued for all Oklahoma teachers, and these bulletins are used freely for class work, school libraries and reading tables. Special bulletins are issued and sent to teachers particularly interested in scientific agriculture and domestic science.

Superintendents and teachers are urged to avail themselves of the advantages offered by this Department for the advancement of practical and industrial education.

Department of Boys and Girls Clubs

T. B. WORTMAN, *Supervisor*
MRS. B. W. MULL, *Instructor in Domestic Science and Art*
H. R. HEDGER, *Assistant*

The Department of Boys and Girls Clubs is a popular feature of the work of the College Extension Division that reaches to every farm home in the State.

These clubs are organized and conducted by the Oklahoma Agricultural and Mechanical College in cooperation with county superintendents of public instruction and teachers as a practical and effective feature in teaching the elementary principles of agriculture, domestic science and other closely allied branches.

The work originated in 1909 when a State Club was organized with 569 active members. Since that time the work has grown rapidly. During the past year the Department organized 570 local clubs with a membership of 14,250 boys and girls.

Our State officers, as well as prominent business men and leading educators all indorse and advocate the organization of Boys and Girls Clubs. Governor Cruce, in a communication to the President of A. and M. College says:

"The Agricultural Club movement is one that should receive the hearty support of every citizen of the State who is interested in its growth and development. The boys and girls engaged in this endeavor are to be congratulated upon the true Oklahoma spirit they are displaying. They are doing a work that will not only yield its returns to them in dollars and cents when they have grown to manhood and womanhood, but will yield to them a still richer return, in the consciousness of having performed a work of worth for the State.

"I want most heartily to endorse the movement inaugurated in this State. If there is anything I can do to aid you in your endeavor along this line, do not fail to command me."

State Superintendent of Public Instruction R. H. Wilson, in a letter to county superintendents, says:

"I wish to invite and urge all county superintendents to cooperate with the management of the Oklahoma Agricultural and Mechanical College, and recommend that you take an active interest in presenting this matter to the teachers of your county and

urge upon them that they take an active part in organizing the Boys and Girls Agricultural and Domestic Science Clubs in their schools."

The cooperation of the teachers of the State is absolutely necessary to make the club work a complete success. All progressive teachers, whether in city or in rural schools, should endeavor to inspire, encourage and to assist boys and girls in such work. In this they will be well rewarded for all their efforts, for, as the work progresses, problems of discipline will vanish; school activities will augment and improve; the whole community will take renewed interest in the school and its support will become liberal.

Boys and girls who live in the city should be as keenly interested in this work as those living in the country. All contests will be open to them. The many hundreds of unsightly back yards and weedy vacant lots, now uncultivated and useless, can be made into attractive and practical gardens, or profitable field plots. Many property owners are often only too glad to offer the use of their lots free for such enterprises.

PURPOSES OF CLUB WORK

The purposes of the A. and M. College Boys and Girls Clubs are—

To acquaint the boys and girls of Oklahoma with the State system of agricultural and industrial education extending from the common schools through the District Agricultural Schools to the A. and M. College; to arouse interest and wholesome respect for the farm and rural home in every member at the opportune time; to vitalize the studies for children in the common schools; to develop in due course a system of education in common schools suited to the children of the common people; to lead men and boys to study farm problems on their own farms; to lead women and girls to study home and family problems in their own homes; to encourage club members to be constructive citizens, producers as well as consumers; to show the relation of the club acre, garden plot and home interests to our common school; to awaken our people to the importance, the advantages and the possibilities of farm life; to inculcate a class sentiment and sense of independ-

ence in the minds of farm-reared children; to organize in the rising generation the farm community as an independent social unit.

MEMBERSHIP

There are three classes of members in the A. and M. College Boys and Girls Clubs:

1. Local Club members.
2. County Club members.
3. State Club members.

All boys or girls not under nine (9) nor over eighteen (18) years of age are eligible for membership in the A. and M. College Boys and Girls local clubs, and when their applications are properly approved by their local teacher or president of the school board as supervisor, they may receive literature free and enter various local, county, district and State contests arranged for members of such clubs.

LOCAL CLUBS

A handsome charter will be issued to five or more members in any school district desiring to organize a local club when they make application on the regular blanks and adopt a constitution and code of by-laws approved by the A. and M. College. The teacher, the clerk of the school board, or some good, practical farmer should act as local manager or supervisor for the club. The supervisor should arrange for a school fair some time during the school session and provide suitable local contests and prizes under the direction of the A. and M. College.

COUNTY CLUBS

The club work in each county is under the supervision of the county advisory committee, consisting of the county superintendent of public instruction, the secretary of the Farmers' Institute, and the secretary of the Woman's Auxiliary to the Farmers' Institute. The county superintendent of public instruction in each county is expected to act as the county manager under the direction of the advisory committee. If for any reason he is unable to act in this capacity, the advisory committee should select some other person for this work at the earliest possible date.

The county superintendent or county manager should issue a call for the organization of a county agricultural club and the

election of temporary officers as early as possible during the spring. The permanent organization and the annual election of officers should take place at the county seat not later than the last Saturday in March. In order to secure a large attendance at each of these meetings, there should be an interesting program provided in which many of the boys and girls would be interested. This may be held in connection with a county teachers' meeting, or any other public meeting where a good attendance of the boys and girls of the county can be secured. In every case the officers of the Farmers' Institute, Woman's Auxiliary, the county fair, commercial clubs, Y. M. C. A., Boy Scouts, or other public organizations, teachers and all leading citizens of the county should be invited to cooperate with the county superintendent in securing a meeting of the boys and girls for organizing a county agricultural club. At the first meeting the county club constitution furnished by the A. and M. College should be adopted, officers elected, the organization perfected, and plans for the coming year arranged as far as possible. Upon the proper application of five or more local clubs, through the president and secretary of the county club, approved by the county superintendent as county manager, a special county charter will be issued by the A. and M. College, which will insure the cooperation and support of the club work by the A. and M. College and the State Board of Agriculture, and will entitle all members of the club to free subscriptions to The New Education, free bulletins, and the privilege of entering county club contests arranged by the A. and M. College.

STATE CLUB

All boys or girls of white parentage who are not under nine nor over eighteen years of age, living in counties where no county or local club can be organized, may apply to the A. and M. College at Stillwater, Oklahoma, and have themselves enrolled as members of the State Club. All members of local and county clubs are accounted members of the State Club without further enrollment.

CONTESTS

All members of the Boys and Girls Clubs for 1914 are expected to enter one of the contests provided for them by the A. and M. College.

The scholarship contests planned for 1914 for boys and girls fourteen to eighteen years old are as follows:

GROUP I—LEADING TO THE STATE FAIR SCHOOL

1—County Grain Contest

For the best exhibit from one acre of corn, kafir, milo or feterita, grown by the contestant, with best report and essay concerning the crop.

2—Sewing Contest

For the best exhibit of three models: 1, A combination undergarment, consisting of a corset cover and drawers; 2, House dress; 3, Fancywork—handwork centerpiece or dresser scarf.

GROUP II—LEADING TO A DISTRICT AGRICULTURAL SCHOOL SHORT COURSE

3—County Miscellaneous Crop Contest

For the best exhibit from one acre of cotton, cowpeas or peanuts, grown by the contestant, with best report and essay concerning the crop.

4—County Canning Contest

For best exhibit of six or more glass quart jars canned fruit and vegetables, including at least two varieties of fruits and two varieties of vegetables, prepared by the contestant, with best report and essay concerning the work.

5—Hog or Poultry Contest

For best exhibit of a live, fat hog, not over eight months old, or a trio of pure bred poultry, under one year old, raised and fitted by the contestant, with the best report and essay concerning the work.

6—Cooking Contest

For best exhibit in cooking, consisting of one loaf of bread and one dozen cookies, made by the contestant, with the best report and essay concerning the work.

PRIZES

In addition to the usual prizes offered in the county contests, such as free scholarships to the District Agricultural School Short Courses, the State Fair School at Oklahoma City, the Farmers' Short Course in the A. and M. College, and the grand prizes of two scholarships in the A. and M. College, worth

$160.00, and the four scholarships in the District Agricultural Schools, worth $90.00 each, there will be a large number of cash prizes and gold medals offered by friends of the A. and M. College and other cooperative agencies in a statewide contest that will be held at the Farmers' Short Course in Stillwater next January. A detailed statement concerning the contests arranged and a full list of prizes to be awarded will be sent upon request.

WINNERS OF SCHOLARSHIPS

Prize winners in the various county club contests who attend the State Fair School and the Short Courses at the District Agricultural Schools engaged in a spirited contest for a free trip and a week's scholarship at the Farmers' Short Course which was held at the A. and M. College in Stillwater, January 12 to 17, 1914.

Fifty-one delegates from these schools attended the Farmers' Short Course and competed for the two scholarships good for one year in the A. and M. College offered to the boy and to the girl making the highest grades; and for the four scholarships good for one year in the District Agricultural Schools offered to the two boys and the two girls making the next highest grades.

These scholarship awards were made as follows:

1. A. & M. COLLEGE

1. Miss Maude Smith, Cordell, Oklahoma.
2. Mr. Forrest Schnorrenberg, R. F. D. 6, Altus, Oklahoma.

2. DISTRICT AGRICULTURAL SCHOOLS

1. Miss Lucile Loveless, R. F. D. 3, Frederick, Oklahoma.
2. Miss Alice Cavette ,R. F. D. 2, Dover, Oklahoma.
3. Mr. Malcolm Kiker, Wewoka, Oklahoma.
4. Mr. Willie Scroggs, R. F. D. 5, Stillwater, Oklahoma.

Department of College Publications

WALTER STEMMONS, *Editor*
E. J. WESTBROOK, *Superintendent of Printing*

This Department has immediate supervision of all A. and M. College publications, printing and press service. It was organized for the purpose of systematizing the printed records and the great volume of printed information issued and distributed each year.

All publications are sent free of cost to any interested person in Oklahoma.

Through this Department the A. and M. College presents to the people of the State all matters of interest with regard to its organization and work, and from its several Departments the results of careful thought and research relating to agriculture, industrial and scientific problems. The several catalogs concern the many courses of instruction and student affairs; The New Education, issued semi-monthly, is the official organ of the College and contains information of value to patrons, students and the State at large; College and Experiment Station bulletins concern questions of general, experimental and technical interest to the farmer and the farm home, the many agricultural organizations, the research student, and all who are in sympathy with agriculture and its development; twice each month articles of timely interest are furnished the State press in the form of clip-sheets. These publications and many others are issued each year and all have been well received, as is indicated by the constant and growing demand for additional service.

The following bulletins are now available and will be sent free of cost upon request:

No. 14. Teachers' Series—Oklahoma School Hotbeds. 6 pp.
No. 17. Agricultural Club Series—Sewing Course—Lessons I, II, III. 8 pp.
No. 19. Agricultural Club Series—Buttermaking. 8 pp.
No. 20. Agricultural Club Series—Milk Testing and Dairy Herd Records. 16 pp.
No. 22. Agricultural Club Series—Dairy Herd Record Course. 4 pp.
No. 22. Agricultural Club Series—Sewing Course—Lessons IV, V, VI. 16 pp.
No. 24. Agricultural Club Series—Cooking Lessons IV, V, VI. 16 pp.
No. 26. Teachers' Series—Spring Laboratory Methods. 8 pp.
No. 26. Teachers' Series—Improvement of Conditions in Rural Schools. 44 pp.
No. 30. Agricultural Club Series—Miscellaneous Crops. 4 pp.
No. 31. Agricultural Club Series—Kafir and Milo Culture. 4 pp.
No. 32. Agricultural Club Series—Broomcorn. 4 pp.
No. 33. Agricultural Club Series—Home Canning. 4 pp.
No. 34. Agricultural Club Series—Hog Selection and Feeding. 4 pp.
No. 36. Teachers' Series—Nature Study. 4 pp.
No. 37. Agricultural Club Series—Bread and Cake Recipes. 4 pp.
No. 38. Teachers' Series—How to Secure Literature on Agriculture and Domestic Science—Rural School Reading Table and Library Suggestions. 2 pp.
No. 39. Teachers' Series—School District Agricultural Resources. 2 pp.
No. 41. Teachers' Series—Nature's Cycle. 2 pp.
No. 42. Teachers' Series—Hibernation of Insects. 2 pp.
No. 43. Teachers' Series—The Role of Organic Matter and Microorganisms in the Soil. 2 pp.
No. 44. Teachers' Series—Suggestions from Nature in Rearing and Feeding Dairy Stock. 2 pp.
No. 45. Extension Series—Broad Terraces. 8 pp.
No. 46. Teachers' Series—Relative Economy of Food Producing Farm Animals. 2 pp.
No. 47. Agricultural Club Series—Sewing. 4 pp.
No. 48. Agricultural Club Series—Canning. 4 pp.
No. 49. Teachers' Series—The Planting of Trees. 2 pp.
No. 50. Agricultural Club Series—Cooking. 4 pp.
No. 53. Extension Series—Hog Cholera and Its Prevention. 4 pp.
No. 56. Agricultural Club Series—Market Poultry and Eggs. 4 pp.
No. 57. Extension Series—Blackleg in Cattle. 4 pp.

No. 58. Extension Series—Hog Cholera; Blackleg. 8 pp.
No. 60. Teachers' Series—Outline Lecture on Livestock. 4 pp.
No. 61. Teachers' Series—Outline Lecture on Horticulture. 2 pp.
No. 62. Teachers' Series—Outline Lecture on Entomology. 2 pp.
No. 63. Teachers' Series—Outline Lecture on Domestic Science. 4 pp.
No. 64. Teachers' Series—Outline Lecture on Agronomy. 2 p..
No. 69. Teachers' Series—Scoring the Rural School. 8 pp.
No. 69. Teachers' Series (Supplement)—Score Card for a Rural School. 4 pp.
No. 70. Agricultural Club Series—Plans for 1914 Contests. 8 pp.
No. 72. Agricultural Club Series—Cowpeas. 4 pp.
No. 74. General Series—A Reorganization of Farming. 20 pp.
No. 75. Agricultural Club Series—Poultry Raising. 4 pp.
No. 76. Agricultural Club Series—Cotton Culture. 4 pp.
No. 77. Agricultural Club Series—Corn Culture. 4 pp.
No. 78. Agricultural Club Series—Peanut Culture. 4 pp.
No. 79. Teachers' Series—Simple Furniture for School Agriculture. 8 pp.
No. 80. Agricultural Club Series—Vegetable Gardening. 4 pp.
No. 81. Agricultural Club Series—Cooking. 4 pp.
No. 82. Agricultural Club Series—Kafir, Milo and Feterita. 4 pp.
No. 83. General Series—Announcement of Summer Term. 4 pp.
No. 84. Agricultural Club Series—Selecting and Fitting Hogs for Show. 4 pp.
No. 85. Agricultural Club Series—Home Canning. 4 pp.
No. 86. General Series—Summer Session Catalog. 32 pp.
No. 87. Agricultural Club Series—Sewing. 4 pp.
No. 88. General Series—Annual Catalog. 230 pp.
No. 89. General Series—A Book of Facts. 8 pp.

All catalogs, bulletins, pamphlets, leaflets, papers, stationery, etc., sent out and used by the A. and M. College are printed in the College Printing office. This office occupies the basement of Central Building, with an office for the Superintendent, job and makeup room, machine room, pressroom, folding and storage room. Its working equipment includes a Mehlie cylinder press, two C. P. Gordon job presses, a standard No. 5 Mergenthaler linotype, one Dexter periodical folder, one Rosback stapling machine, one punching machine, one paper cutter, etc., all of which are operated by individual motors.

THE AGRICULTURAL EXPERIMENT STATION

L. L. LEWIS, *Acting Director*

The Agricultural Experiment Station was located at Stillwater in July, 1891. It is endowed by Federal funds provided by acts of Congress. The fund known as Hatch Fund was provided in 1887 and the Adams Fund in 1906. These funds now provide $15,000.00 each, or a total of $30,000.00 per year. The Hatch Fund can be used for general lines of experimental work in fruit growing, livestock production, feeding, etc., while the Adams Fund can be used only for expenses connected with lines of original research.

The work of the Experiment Station is organized so that a given line of work is known as a project. These are given numbers, and all reports concerning this line of work are so designated. At the present time there are twenty-nine Hatch Fund projects and fifteen Adams Fund projects. The various lines of work represented by these projects are along lines that are of practical value to the State. Experiments are being conducted not only to increase production of crops, but to demonstrate the increased value of these crops when fed to meat and milk producing animals. Conservation of soil fertility by use of good crop rotation methods and the growing of legumes needs attention at all times. Oklahoma has a great variety of soil types and a rainfall that varies greatly in the different sections of the State. These conditions make it necessary to study closely the adaptability of various crops to certain sections of the State.

The results obtained in the various lines of experimental work are published as bulletins. Other series of publications are issued as may be necessary for giving publicity to the work. Since the establishment of the Station there have been published twenty-two annual reports, one hundred bulletins, twenty-nine circulars and one hundred and eighty-seven press bulletins. These various publications are sent free to those interested in agricultural work. At the present time the number of names on the mailing list is about 10,000.

Much of the work of the Station is brought before the people of the State through the Extension work of the College. While the regular mailing list contains only about 10,000 names, the work of the Station through the Extension Division reaches many times this number of interested persons.

OFFICIAL LIST OF TEXTBOOKS

Following is the list of textbooks by courses for the several Departments of the College giving name of text, author and the price of each, adopted by the Faculty April 16, 1914.

Notebooks are not listed. Uniform notebooks have been adopted by the Faculty and will be used by all Departments of the A. and M. College requiring the use of notebooks. The notebook used for theory work will cost five cents and the notebook used in practicum work will cost not to exceed thirty cents. Specimens of these notebooks are on file in the President's office.

THE SCHOOL OF AGRICULTURE

Department of Animal Husbandry

ANIMAL HUSBANDRY:

1*a-b*.	No text.	
2*a-b*.	Types and Breeds of Farm Animals—Plumb	$ 2.00
3*a-b*.	Principles of Breeding—Davenport	2.50
4.	Feeds and Feeding (Latest Edition)—Henry	2.00
5.	Livestock Judging—Craig	1.50
7 *a-b*.	No text.	
9, 10, 11.	Productive Poultry Husbandry—Lewis	2.00
	American Standard of Perfection	2.00

Department of Agronomy

AGRONOMY:

1.	Farm Machinery and Motors— Davidson & Chase	$ 2.00
2.	Soils—Lyons & Fippin	1.75
	Soils—Stevens & Schaub	.50
3.	Examining and Grading Grains—Lyons & Montgomery	.50
4.	Southern Field Crops—Duggar	1.75
5, 6.	No text.	
7.	Farm Management—Warren	1.75
8*a-b*.	Fertilizers and Manures—Wheeler	1.75
9.	Elements of Agriculture—Warren	1.10
10.	An introduction to Geology—Scott	2.60
11.	Gas Engines—Roberts	2.00
12.	Agricultural Engineering	1.50
14.	Practical Irrigation	1.50

Department of Dairy Husbandry

DAIRYING:

1.	Dairy Farming—Michels	$ 1.00
2.	Loose Leaf Dairy Laboratory Exercises—Larson	.35
3.	Principles and Practice of Buttermaking—McKay & Larson	1.50
	Practical Buttermaking—Myer	1.50
4.	Cheese Making—Decker	1.75
	Fancy Cheese in America—Publow	.50
5.	Dairy Cattle and Milk Production—Eckles	.50
6.	Testing Milk and Its Products—Farrington & Wall	1.25
7.	Instruction for Traction and Stationary Engines—Boss	1.00
8.	Dairy Technology—Larson & White	1.50

Department of Horticulture and Botany

HORTICULTURE:

1.	Lessons in Fruit Growing—Goff	$ 1.00
2.	Plant Anatomy—Stevens	2.00
3.	Plant Physiology—Green	3.00
4.	Nursery Book—Bailey	1.60
5.	No text.	
6.	Systematic Pomology—Waugh	1.00
7.	Genetics—Walters	1.50
8.	Landscape Gardening—Kemp	1.50

BOTANY:

1*a-b*.	Principles of Botany—Bergen & Davis	$ 1.50
2, 3.	Plant Physiology—Duggar	2.00
4.	Fungous Diseases of Plants—Duggar	2.00
5.	New Manual of Botany (Seventh Edition)—Gray	2.50
6.	No text.	
7.	Methods in Plant Histology—Chamberlain	2.00
8, 9.	No text.	

THE SCHOOL OF ENGINEERING

Department of Mechanical Engineering

MECHANICAL ENGINEERING:

1, 2, 3*a-b*, 4.	No text.	
5.	Elementary Mechanics—Merrill	$ 1.50
6*a-b-c*.	Mechanical Drawing—C. L. Adams, Van Nostrand	3.00
	Drawing Instruments about	10.00
8.	Kinematics—Schwab & Merrill	3.00
9*a-b*.	Same as M. E. 6*a-b-c*.	
10*a-b-c*.	No text.	
11*a-b*.	Thermodynamics—Reeve	2.50
12.	Elements of Steam Engineering—Spangler, Green & Marshall	2.50
13*a-b-c*.	Machine Design—Unwin	3.00
14.	Hydraulic Engineering—Turneaure & Black	3.00
15.	Internal Combustion Engines—Hogle, McGraw & Hill	3.00
16.	Steam Power Plants—Meyer	2.00
17.	No text.	
18.	Heating and Ventilating—Carpenter	3.50
19*a-b*.	No text.	

Department of Electrical Engineering and Physics

ELECTRICAL ENGINEERING:

1*a-b*.	Elements of Electrical Engineering, Vol. I—Franklin & Esty	$ 4.50
2*a-b-c*.	No text.	
3.	Interior Wiring, Parts I and II	.75
5.	Storage Battery Engineering—Lyndon	3.00
	Electrical Engineer's Handbook—Foster	5.00
6.	Electrical Engineer's Handbook—Foster	5.00
7*a-b-c*.	Elements of Electrical Engineering, Vol. II—Franklin & Esty	3.50
8*a-b-c*.	Transactions A. I. E. E.	2.50
9.	Dynamo Design, Notes and Blueprints	1.75
10, 11.	No text.	
12.	Power Plant Engineering—Weingrein	5.00
13.	No text.	
14.	Blueprints of Circuits	1.00
15, 16.	No text.	

PHYSICS:

1, 5.	Practical Physics—Black & Davis	$ 1.25
	Millikan & Gale Laboratory Manual	.40
2.	Laboratory notes	.30
3, 4.	Laboratory Experiments—McPheeters	1.00
2, 3, 4.	College Physics—Spinney	2.50

Department of Civil Engineering

CIVIL ENGINEERING:

1.	Surveying—No text.	
2.	Principles and Practice of Surveying, Vol. I—Breed & Hosmer	$ 3.00
3.	Railroad Curves and Earthwork—Allen	2.00
4, 5.	No text.	
6.	Roads and Pavements—Spaulding	2.00

7. No text.
8. Irrigation Engineering—Wilson ..... $ 4.00
10a-b. Applied Mechanics for Engineers—Hancock 2.00
11. Hydraulics—Russell 2.50
12. Framed Structures, Part I—Johnson, Bryant & Turneaure 3.00
13. No text.
14. Masonry Construction—Webb & Gibson 3.00
15. Same as C. E. 14.
16. Sewerage—Folwell 3.00
17. Public Water Supply—Turneaure & Russell 5.00
18. Strength of Materials—Laboratory Manual ..... .75
Strength of Materials—Hancock & Slocum 3.00
19. Elements of Railway Engineering—Raymond 3.50
20. Elements of Specification Writing—Kirby 1.25
21, 22, 23. No text.

Department of Architectural Engineering

ARCHITECTURAL ENGINEERING:

1. Building Construction, Vol. II—Kidder ..... $ 3.50
2. History of Architecture—Hamlin 1.70
3. Architectural Drawing—Bourne 1.50
4. Lettering—French & Meiklejohn 1.00
5. Principles and Practice of Plumbing—Cosgrove 3.00
6. Details of Building Construction—Martin 1.75
Stonecutting and Masonry—Siebert-Biggin 1.50
7. The American Vignola, Part I—Ware 2.25
8. Architectural Perspective—Ferguson 1.50
9. Pen Drawing—Maginnis 1.00
10a. Design—Kelly & Mowil 1.50
10b. Factories and Workshops—Thwaite 2.50
11. Steel Construction—Tucker 1.50
12. Estimating—Nichols 1.00
13. Building Superintendence—Nichols 1.50
14a-b-c. No text.
15. High Office Buildings—Birkmire 3.50
16a. Successful House—White 2.00
Drawing Instruments about 5.00
17a-b. Practical Descriptive Geometry—Smith 2.00
18. Development of Ornament—Lindenberg 3.00

THE SCHOOL OF DOMESTIC SCIENCE AND ART

Department of Domestic Science

DOMESTIC SCIENCE:

2a-b. Food and Dietetics—Hutchison ..... $ 3.00
5. Good Manners for All Occasions 1.50
6a-b-c. Same as 2a-b.
12a-b-c. Equipment for Teaching Domestic Science ..... .75
Elements of the Theory and Practice of Cookery 1.25
14a-b-c. The Boston Cooking School Cookbook 1.50
Card Catalog ..... .75
19a-b-c. The Chemistry of Food and Nutrition—Sherman 1.50
Laboratory Manual of Dietetics—Rose 1.00
20. Water Color Paints ..... .75
Catalogs of Furniture ..... .50

Department of Domestic Art

DOMESTIC ART:

1a-b-c, 2a-b-c, 3a-b-c. No text.
4a-b-c. Textiles—Woodman & McGowan ..... $ 2.00
5, 6, 7, 8, 9, 10a, 11a-b. No text.
12a-b-c. Domestic Art in Woman's Education—Cooley 1.25
13, 14. No text.

THE SCHOOL OF SCIENCE AND LITERATURE

Department of Zoology and Bacteriology

ZOOLOGY:

1. Manual of Zoology—Parker & Haswell ..... $ 1.60
2. Histology and Organography—Hill 2.25

3. General Biology—Needham ..... $ 2.25
4. Embryology—Reece 1.75
5. Comparative Anatomy—Wiederscheim 3.00
6. No text.
7a-b. Histology—Ferguson 4.00
8. No text.

PHYSIOLOGY:
1. Physiology—Kirk ..... $ 2.50

BACTERIOLOGY:
1. General Bacteriology—Muir & Ritchie ..... $ 2.75
2. Agricultural Bacteriology—Lippman 2.00
3. Technical Bacteriology—Bolduan 1.70
4, 5. Household Bacteriology—Buchanan 2.00

Department of English and Public Speaking

ENGLISH:
1a. Myths of Greece and Rome—Guerber ..... $ 1.50
Homer's Iliad—Trans. Lang. Pocket Classics ..... .25
Stevenson's Treasure Island—Lake Classics ..... .25
Shakespeare's Merchant of Venice—Arden Edition ..... .25
1b. Mother Tongue, Book II ..... .60
Scott's Talisman—Pocket Classics ..... .25
Dickens' Tale of Two Cities ..... .25
1c. Wooley's Handbook ..... .60
Tennyson's Idylls of the King—Pocket Classics ..... .25
Byron's Prisoner of Chillon—Riverside Literature Series ..... .25
2a-b-c. English Composition in Theory and Practice—Canby and Others 1.25
2a. Macaulay's Life of Johnson—Pocket Classics ..... .25
2b. Shakespeare's King Lear and Henry IV—Arden Edition ..... .50
2c. Browning's Selected Poems—Lake Classics ..... .40
5. The complete poems of Wordsworth, Coleridge, Byron, Shelly and Keats—Gladstone Edition ..... .50
6. Tennyson's Complete Poems—Macmillan Edition ..... .75
7. Carlyle's Heroes and Hero Worship—Athenaeum Press Series ..... .80
Ruskin's Essays and Letters, Selected—Standard English Classics, .60
8a-b-c. Probably no text.
9a-b-c. Twelve Centuries of English Prose and Poetry—Newcomer & Andrews 1.75

PUBLIC SPEAKING:
1a-b-c. Foundations of Expression—Curry ..... $ 1.25
2. Classics for Vocal Expression—Curry 1.25
3, 4. No text.

Department of Foreign Languages

GERMAN:
1a-b-c. German Grammar—P. V. Bacon ..... $ 1.10
1c. Gruss aus Deutchland ..... .90
2a-b-c. German Composition—P. V. Bacon 1.25
2c. William Tell—Schiller 1.00
3b. Scheffels Trompeter Vose—Sakkinge ..... .90
3b. Der Kampfum Rom—Felix Dahn ..... .55
3c. Scientific German Reader—Dippold ..... .75

LATIN:
1a-b-c. Latin Lessons—Smith ..... $ 1.00
1a-b-c. Caesar's Gallic War 1.25
1a-b-c. Latin Grammar—Bennett ..... .80
2a-b. Cicero's Orations 1.25
2a-b. Latin Composition—Daniell 1.00
2c. A Term of Virgil ..... .75

FRENCH:
1a. Chardenal's complete French course ..... $ 1.20
1b. French Reader—Aldrich & Foster ..... .50
1c. L'Enfant Espion ..... .75
2a. Merimee's Colomba ..... .40
2b. Moliere's L'Avare ..... .40
2c. Victor Hugo's "Les Miserables" ..... .80

SPANISH:
1a, 1b, 1c. A practical Spanish Grammar—Coester ..... $ 1.25
2a. Alarcon Novelas Cortas ..... .90
2b-c. Dona Perfecta—Galdos 1.00

Department of Mathematics

MATHEMATICS:

1*a-b.*	First Principles of Algebra—Slaught & Lennes	$ 1.20
1*c.*	College Algebra—Reitz & Crathorne	1.50
2*a-b-c.*	Plane and Solid Geometry—Stone & Mills	1.30
2*a-b-c.*	Plane Geometry—Stone & Mills	.85
3.	Plane and Spherical Trigonometry—Ashton & March	1.20
4*a-b.*	Brief Course in Analytical Geometry—Tanner & Allen	1.50
5.	Elements of Astronomy—Young	1.60
6*a-b-c.*	Infinitesimal Calculus—Murray	2.00
7.	Differential Equations—Murray	2.00

Department of Chemistry

CHEMISTRY:

1*a-b-c.*	Essentials of Chemistry—Williams	$ 1.50
2.	Lecture Notes—Welch	1.00
2.	Qualitative Analysis—Irish	.50
5.	Industrial Chemistry—Benson	2.00
8*a-b.*	Quantitative Analysis—Treadway & Hull	4.00
	Organic Chemistry—Remsen	1.25
10.	Principles of Agricultural Chemistry—Fraps	2.00
12.	No text.	
14.	Manual of Chemical Analysis, Quantitative and Qualitative—Newth	1.75
15.	Introduction to Physical Chemistry—Jones	1.50
	Quantitative Analysis—Treadway & Hull	4.00
16.	Outlines of Physiological Chemistry—Beebe & Buxton	1.50
17.	Outlines of Organic Chemistry—Moore	1.50
	Experiments in Organic Chemistry—Moore	.50

Department of Entomology

ENTOMOLOGY:

1.	Elementary Stories in Insect Life—Hunter	$ 1.25
2, 3.	No text.	
4.	Manual of Insect Life—Comstock	4.25
5.	No text.	
6.	Text to be adopted.	

Department of Drawing

DRAWING:

No text.

Department of History

HISTORY:

1*a.*	History of United States—Elson	$ 1.75
1*b.*	American Government—Hinsdale	1.25
1*c.*	Modern History	1.50
2*a-b.*	History of England—Cheney	1.40
2*a-b.*	Source Book of English History	1.40
3.	American History and Government—West	2.00
4.	Oklahoma History and Civics—Evans & Roberts	.....
	History Note and Map Book	.30

THE SCHOOL OF TEACHERS NORMAL TRAINING

Department of Pedagogy and Social Science

PEDAGOGY:

1.	Psychology—Angell, or any other good text	$ 1.50
2.	History of Education—Monroe, or any other good text	1.50
3.	Any good text in Methods of School Management	1.00
4.	Any good text in Theory and Practice of Teaching	1.00
5.	Philosophy of Education—Horne	1.50
6.	Any good text in Educational Psychology	1.50
7.	High School Education—Johnston and others	1.50
8.	High School Administration—Brown or Hollister	1.50
9.	School Supervision—Dutton or Chancellor	1.50

SOCIAL SCIENCE:

1.	Commercial Law—Gano	$ 1.00
	Economics—Seager	1.75
2.	Outlines of Economics—Ely	2.00
3.	Trust Problems—Jenks or Ely	1.00
5.	Sociology—Dealey	1.50
6.	Social Duties—Henderson; or Social Pathology—Smith	1.50
7.	Economic History of United States—Bogart or Coman	1.50
8.	Politics and Government—Beard; or Actual Government—Hart	

THE SCHOOL OF COMMERCE AND MARKETING

Department of Political Economy and Marketing

2.	Outlines of Economics—Ely	$ 2.00
3.	The City the Hope of Democracy—Howe	1.75
4.	Business Organization and Combination—Haney	2.00
6.	International Commercial Politics—Fiske	1.25
7.	Principles of Rural Economics—Carver; or	1.25
	The State and the Farmer—Bailey	1.25
9.	Cooperation Among Farmers—Coulter	1.00
10.	Elements of Transportation—Johnson	1.50
11.	Principles of Industrial Management—Duncan; or	2.00
	Labor and Administration—Commons	1.60
12.	Money and Banking—White; or	1.50
	Introduction to Public Finance—Plehn	1.75
13.	Principles of Insurance—Gephart	1.60

Department of Business Training

BUSINESS:

Bookkeeping, Modern Illustrative—Williams & Rogers	$ 2.75
Spelling, Speller—P. B. S. Peters	.25
English, Business English—Carl Marshall	.85
Arithmetic, Arithmetic—Moore & Miner	1.00
Commercial Law, Commercial Law—Gano	1.00
Bookkeeping, Advanced Bookkeeping—Williams & Rogers	3.75
Penmanship, American Penman—A. N. Palmer	.50
Banking—Goodyear-Marshall	2.00
Farm Accounting—Goodyear-Marshall	1.00
Bookkeeping, Banking—Williams & Rogers	1.35
Business Correspondence—Campbell's, Erskine	.45

STENOGRAPHY:

Shorthand, Shorthand Manual—John R. Gregg	1.50
Shorthand Exercise Book—John R. Gregg	.50
Shorthand, Gregg Writer (Magazine)—John R. Gregg	.65
Typewriting—Vansant	1.00
Penmanship, American Penman—A. N. Palmer	.50
Spelling, Speller—P. B. S. Peters	.25
English, Business English—Carl Marshall	.85
Shorthand, Dictation Book—W. C. Eldridge	.65
Business Correspondence—Campbell's, Erskine	.45

THE SCHOOL OF VETERINARY MEDICINE

Department of Veterinary Medicine

VETERINARY MEDICINE:

1.	Veterinary Anatomy—Ballou	$ 1.25
2.	Animal Parasites—Kaupp	2.25
3.	Materia Medica—Quittman	2.50
4.	Veterinary Medicine—Leeny	3.50
5*a*.	Osteology—McFadyean	2.50
5*b-c*, 6*a-b-c*.	Anatomy—Sisson	7.00
7*a-b-c*.	Materia Medica and Therapeutics—Winslow	6.00
8.	No text.	
9.	Animal Parasites—Kaupp	2.25
10*a-b*.	Veterinary Pathology—Kinsley	4.50
	Examination of Urine of Horse and Man—Fish	1.50
	Pathology of Blood of Domestic Animals—Burnett	2.50
11*a-b*, 12*a-b-c*.	Veterinary Medicine—Hutyra & Marek	12.00
13*a-b-c*.	Veterinary Surgery—Dollar	6.50
	Diseases of the Horse's Foot—Ruks	4.00

14.	Veterinary Obstetrics—Williams	$ 8.00
15.	Dentistry—Merrillatt	3.00
16.	Clinical Diagnosis—Malkmus	3.00
17.	Veterinary Physiology—Patton	2.50
18.	No text.	
19.	Pure Milk and Public Health—Ward	2.00
	Production and Handling of Clean Milk—Winslow	3.00

SUB-FRESHMAN DEPARTMENT

English, English Grammar—Gowdy	$ .80
Ancient History—West	1.50
Algebra, First Principles of Algebra—Slaught & Lennes	1.20
Physiology, Advanced—Conn & Buddington	1.10
English, Elementary Composition—Scott & Denny	.80
Etymology, Study of English Words—Anderson	.40
English, Classics and Theme Paper (estimated)	1.00
Arithmetic—Wentworth & Smith	.35
History Maps and Note Book	.30
Agriculture for High Schools—Mayo & Hatch	1.00
Physiology NoteBook	.35
Spelling—Words—Gregg	.25

DEPARTMENT OF MILITARY SCIENCE

MILITARY SCIENCE:
Infantry Drill Regulations, 1911.

DEPARTMENT OF MUSIC

First Year, Music Theory—Tapper	$ 1.00
(For instrumentalists other than piano, and for Senior Public School Music)	
Intervals, Chords and Ear Training—Jean Parkman Brown	1.00
(For piano and advanced students)	
Supplement to the Tonic Sol-Fa Music Course for Schools, Parts I, II, III—Batchelor & Chalmburys, each	.15
(For Junior vocal sight reading students)	
Harmony Simplified—Francis L. York	1.00
(For Senior piano and vocal students)	

ALUMNI

ORGANIZATION FOR 1913-14

LOYAL F. PAYNE, 1912, Stillwater, Oklahoma.....*President*
H. H. WHITE, 1913, Poplar Bluff, Missouri...*First Vice President*
L. B. RITTER, 1910, Stillwater, Oklahoma...*Second Vice President*
J. E. WOODWORTH, 1904, Guthrie, Oklahoma.....
.....*Third Vice President*
C. H. MCELROY, 1906, Stillwater, Oklahoma.....*Secretary*
E. C. GALLAGHER, 1909, Baldwin, Kansas.....*Treasurer*

The following is a list of the graduates of the College, and in each case the address and occupation is given as correctly as the Secretary's records show. In case of change of address, it is especially desired that graduates advise the Secretary of same. The courses from which alumni have received their B. S. degrees are indicated as follows:

I. Agriculture;
II. Engineering;
III. General Science (Science and Literature and Domestic Economy up to the year 1908-1909);
IV. Domestic Science and Art;
V. Science and Literature;
VI. Teachers Normal Training;
VII. Commerce and Marketing;
VIII. Veterinary Medicine.

Adams, A. W., I,1896, Real Estate Agent, ...Ardmore, Oklahoma
Adams, J. H., I, 1896, Real Estate Agent.....Ardmore, Oklahoma
Adams, Myrtle, IV, 1913, Professor of Domestic Science in Cameron State School of Agriculture.....Lawton, Oklahoma
Aikins, Evelyn, IV, 1911, Instructor in Domestic Science.....Carrington, N. D.
Akagi, Yutaka, I, 1912, Agriculturist.....Bingo, Japan
Albert, H. R., V, 1912, Instructor in High School.....Chickasha, Oklahoma
Allen, H. S., II, 1910, Engineer for Railroad Company.....Eureka, Arkansas
Anderson, A. B., II, 1902, Chief Inspector Santa Fe Motive Power Company.....Topeka, Kansas
Anderson, R. E., V, 1908, Collection Agency.....Los Angeles, California
Anderson, A. W., III, 1900, Lawyer.....Woodward, Oklahoma
Acheson, Margaret, VI, 1912, at Home.....Jacksonville, Florida
Atkinson, Mary B., III, 1906, Instructor in High School.....Bartlesville, Oklahoma

Baade, H. J., V, 1910, Instructor in High School.....Nappa, California
Baird, R. O., III, 1908, M. S., in Chemistry, Assistant Station Chemist North Dakota A. and M. College.....Fargo, North Dakota
Ball, H. L., II, 1905, President John Deitz Mfg. Co.....Cincinnati, Ohio
Bartlett, E. C., I, 1912, Farmer.....Rye, Colorado
Bartlett, E. E., V, 1912, Real Estate Business.....Mannford, Oklahoma
Bennett, Paul, II, 1908, Commissioner Light and Water.....Stillwater, Oklahoma
Bentley, M. R., II, 1909, Farmer.....Charley, Texas
Bilyeu, R. I., III, 1905, Ward Principal.....Enid, Oklahoma
Blackwell, C. P., V, 1911, Graduate student at University of Wisconsin .....Madison, Wisconsin
Bloom, C. H.,II, 1913, Gary Coal and Coke Co.,.....Gary, West Virginia
Blue, F. R., II, 1905, Farmer.....Cushing, Oklahoma
Boley, A. L., II, 1908, Engineer.....Fairview, Oklahoma
Blue, True C., II, 1909, Bagnall & Hillis Company,..... .....No. 12 Imabashi Go-Chome, Higashiku, Osaka, Japan
Bonar, H. T., II, 1913, Westinghouse Electric Mfg. Co.....Wilkinsburg, Pennsylvania
Boutin, H. C., II, 1909, Chief Operator Commonwealth Edison Co.....Chicago, Illinois
Bowers, Chas. I, 1913, Instructor in Agriculture.....LeFargo, Wisconsin
Bowers, G. W., III, 1897, Railway Conductor.....Enid, Oklahoma
Bowers, R. D., III, 1904, Lawyer.....Roswell, New Mexico
(Braden) Robinson, Gertrude, III, 1906, at Home.....Lexington, Kentucky
(Bradwell) Newby, Ollie, V, 1909, at Home.....Mulhall, Oklahoma
(Bras) Owens, Ruth, V, 1907, at Home.....Fort Lauderdale, Florida
Breuer, E. H., II, 1911, Rock Island R. R. Co.,.....Jacksboro, Texas
Broom, Rose E., III, 1905, Teacher.....Perkins, Oklahoma
Brown, C. B., I, 1913, Asst. in Dry Land Farming, U. S. Department of Agriculture.....Dalhart, Texas
Brown, Chas. W., III, 1906, Asst. in Bacteriology, Michigan Experiment Station.....East Lansing, Michigan
Brown, J. J., II, 1903, Westinghouse Electric Mfg. Co.....Marysville, Tennessee
Buchanan, W. A., I, 1912, Extension Work, Iowa State College.....Ames, Iowa
Buffington, Betha, IV, 1912, Instructor in High School.....Brigham City, Utah
Bullen, C. K., II, 1909, Lumber Business.....Perry, Oklahoma
Bullen, B. C., V, 1912, Student George Washington University....Blooklyn, New York
Bullock, N. P., III, 1899, Teacher.....Stillwater, Oklahoma
Burke, Elizabeth, IV, 1913, Graduate Student A. and M. College..Stillwater, Oklahoma
Burke, M. P., II, 1909, Civil Engineer.....Tulsa, Oklahoma
Burke, Wm. J., II, 1911, Westinghouse Electric Mfg. Co.....Wilkinsburg, Pennsylvania
Burlison, Wm. L., I, 1905, Asst. Professor of Agronomy, Illinois University .....Urbana, Illinois
*Burnett, Roy E., III, 1905.....Stillwater, Oklahoma

Camp, W. E., II, 1910, General Electric Co.....Schenectady, New York
Campbell, Viola, IV, 1913, Instructor in Domestic Science.....Warner, Oklahoma
Carson, Susie S., III, 1902, Hardware Business.....Perkins, Oklahoma
Carson, Ross L., III, 1907, Hardware Business.....Perkins, Oklahoma
Carter, W. C., II, 1911, Westinghouse Electric Mfg. Co.....Pittsburgh, Pennsylvania
Casali, Louise, IV, 1911, Professor of Domestic Science, Oklahoma Institute of Technology.....Tonkawa, Oklahoma
(Caton) Younge, Orpha M., IV, 1909, at Home.....Warner, Oklahoma
Caudell, A. N., I, 1897, Entomologist U. S. Department of Agriculture..... .....Washington, D. C.
Chandler, Emma, IV, 1906, Boys and Girls Club Work, U. S. Department of Agriculture.....Oklahoma City, Oklahoma
Chandler, F. R., II, 1904, Asst. Master Mechanic, Bethlehem Steel Company .....South Bethlehem, Pennsylvania
(Chivington) Tyson, Anna, IV, 1911, at Home.....Tulsa, Oklahoma
(Chester) Goodwin, Bertha, III, 1907, at Home.....Fort Dodge, Kansas
Clausen, B. O., II, 1912, Franklin Mfg. Co.....Syracuse, New York
Clausen, Mrs. B. J., VI, 1912, at Home.....Lawrence, Kansas
Clausen, R. E., I, 1910, Graduate Student University of California..Berkeley, California
Cloukey, H. U., III, 1909, Asst. Chemist Morris Packing Co..Oklahoma City, Oklahoma
Clark, J. T., III, 1898, Treasurer Mindanao Province.....Cagoyon, P. I.
Clark, Arthur C., II, 1906, Hardware Business.....Claremore, Oklahoma
Clark, F. J., III, 1898, Circulation Manager Oklahoma Farm Journal..... .....Oklahoma City, Oklahoma
Cobb, Mary I., IV, 1913, Teacher High School.....Pawhuska, Oklahoma
Cobb, A. L., II, 1913, General Electric Co.....Schenectady, New York
Coburn, Carrol, II, 1912, General Electric Co.....Schenectady, New York
Cook, H. P., II, 1912, Instructor in High School.....Guthrie, Oklahoma
Cole, Frank, III, 1908, Mining Company.....Anaconda, Montana
Comstock, F., II, 1912, General Electric Co., Sales Department....Mexico City, Mexico
Comstock, Harry, II, 1905, Asst. General Manager.....Mineville, New York

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Connell, W. B., V, 1912, Graduate Student at M. U.....Columbia, Missouri
Correll, V. I., V, 1912, Instructor in High School.....Perkins, Oklahoma
(Cox) Fisher, Mary E., IV, 1913, at Home.....Cleveland, Mississippi
Crawford, C. W., III, 1909, Farmer.....Apache, Oklahoma
Crocker, Fred, V, 1912, Tenn. Coal, Iron & R. R. Co.....Birmingham, Alabama

Davis, R. N., I, 1911, Operating Creamery.....Salmon, Idaho
Dolde, W. E., II, 1912, Graduate Student at Ore.....Corvallis, Oregon
(Donart) Coffey, Cora M., III, 1900, at Home.....Lawton, Oklahoma
Donart, C. R., III, 1899, Hardware Business.....Altus, Oklahoma
Dorman, W. S., II, 1911, Civil Engineer.....Phoenix, Arizona
Dougan, E. E., II, 1907, General Electric Company.....Pittsfield, Massachusetts
Drake, T. J., V, 1913, Secretary to Faculty.....Goodwell, Oklahoma
Duck, T. W., II, 1912, Santa Fe R. R. Co.....Little Rock, Arkansas
Duck, F. E., I, 1896, Farmer.....Stillwater, Oklahoma
Durham, S. B., I, 1904, Instructor in Animal Husbandry, Agricultural College.....Los Banos, La Lagum, P. I.
(Dysart) Teter, Minnie, III, 1899, at Home.....Bristow, Oklahoma

Eads, Velma, IV, 1913, Instructor in Domestic Science in High School.....Frederick, Oklahoma
Eberle, Dovie, III, 1906, Instructor in High School.....Brenham, Texas
English, Wm.L., I, 1905, Agri. Commissioner, Frisco R. R. Co.....St. Louis, Missouri
(English) Lantz, Maud M., III, 1907, at Home.....Willows, California
Evans, A. Ray, I, 1912, Asst. Agronomist, University of Missouri....Columbia, Missouri

Fansher, R. A., I, 1912, Pure Bred Stock Business.....Edmond, Oklahoma
Fansher, Ted, I, 1913, Pure Bred Stock Business.....Edmond, Oklahoma
Faulds, N. M., II, 1910, Practitioner.....Enid, Oklahoma
Fisher, J. G., II, 1910, Engineer Union Development Co.....Cleveland, Mississippi
Flower, A. W., III, 1902, Railway Service.....Deer Creek, Oklahoma
Ford, A. G., III, 1898, Real Estate Business.....Muskogee, Oklahoma
Ford, W. W., II, 1913, with J. P. Curtian, Architect.....Tulsa, Oklahoma
Forrester, D. R., I, 1913, Asst. in Animal Husbandry, Oklahoma A. and M.....Stillwater, Oklahoma
Francis, Victor, II, 1908, Supt. Const. Power Plant.....Wagoner, Oklahoma
(Freiday) Barnett, Almira, IV, 1912, at Home.....Crossette, Arkansas
Frensel, H. H., II, 1912, Mo. Pac.-Iron Mountain Ry. Co.....McGehee, Arkansas
Frier, C. H., II, 1911, General Electric Company.....Schenectady, New York
Funda, F. P., II, 1910, Chief Draftsman, R. I. Ry.....El Reno, Oklahoma

Gaasch, Glenn, II, 1909, Texas Pipe Line Company.....Tulsa, Oklahoma
Gager, E. H., II, 1908, Commonwealth-Edison Electric Company.....Chicago, Illinois
Gallagher, E. C., II, 1909, Physical Director Baker University.....Baldwin, Kansas
Gammie, R. J., II, 1910, Civil Engineer.....Texarkana, Texas
Gardner, Frank, II, 1911, Civil Engineer, Central States Bridge Co..Purcell, Oklahoma
Gaudian, Will, II, 1912, Commonwealth-Edison Electric Company.....Chicago, Illinois
Galyon, E. C., II, 1911, Westinghouse Electric and Mfg. Co....Pittsburgh, Pennsylvania
Gilmer, T. P., II, 1913, General Electric Company.....Lynn, Massachusetts
Gilbert, N. T., III, 1898, Banker.....Bristow, Oklahoma
Gilbert, J. C., I, 1904, Professor in Government Schools.....Shanghai, China
Goff, T. T., III, 1900, Instructor in Gem City Business College.....Quincy, Illinois
Gollehon, Floyd, II, 1910, Instructor.....Stillwater, Oklahoma
Goom, Austin, V, 1912, Banker.....Ripley, Oklahoma
Goltry, H. U., V, 1913, Farmer.....Marietta, Oklahoma
Gougler, F. A., I, 1909 Graduate Student Kansas State Agricultural College.....Manhattan, Kansas
Gray, W. F., I, 1912, Farmer.....May, Oklahoma
Gravelle, E. E., II, 1913, Civil Engineer.....Wichita Falls, Texas
Gregory, H. W., I, 1912, Dairyman.....Brookings, S. D.
Greiner, F. M., III, 1899, Chemist Iron Works.....Gary, Indiana
Gulick, H. S., III, 1903, Chief Chemist American Steel Foundry Company.....East St. Louis, Illinois
Guynn, P. N., II, 1904, Inspector Civil Engineer, Illinois Steel Company.....Brooklyn, New York

Hagar, Hyral S., V, 1910, Stenographer A. and M. College.....Stillwater, Oklahoma
Hall, R. V., II, 1911, Civil Engineer.....Texarkana, Texas
Hamblin, Clyde M., II, 1904, Electrical Expert Navy Yard.....Washington, D. C.
Hamilton, F. C., V, 1910, Farmer.....Mulhall, Oklahoma
Hamilton, Fearne, V, 1913, Teacher in High School.....Stillwater, Oklahoma
Hamilton, J. H., V, 1910, Student at Harvard.....Boston, Massachusetts
Hamon, C. A., II, 1910, Westinghouse Elec. and Mfg. Co....Wilkinsburg, Pennsylvania
Hamon, R. J., II, 1911, Bureau of Plant Industry.....Washington, D. C.
Hamon, Fannie, V, 1908, at Home.....Fort Lauderdale, Florida
Hann, F. R., II, 1912, Commonwealth-Edison Company.....Chicago, Illinois
Hancock, A. V., II, 1907, General Electric Company.....Oklahoma City, Oklahoma

Hancock, Joy B., IV, 1909, Professor of Domestic Science Industrial Institute.....Chickasha, Oklahoma
Hart, Haden, I, 1913, Livestock Farmer.....Hanford, Texas
Harnden, E., VI, 1912, Graduate Assistant A. and M.....Stillwater, Oklahoma
Hartenbower, A. C., I, 1905, Director of Government Experiment Station.....Island of Guam
Hartshorne, E., II, 1912, Commonwealth-Edison Co.....Carozal, C. Z., Panama
Hartman, T. J., III, 1898, Banker.....Tulsa, Oklahoma
Harrison, L. D., V, 1913, Instructor in English and Math. in Secondary School.....Tishomingo, Oklahoma
Harvey, C. E., II, 1911, with State Architect.....Chicago, Illinois
Harvey, J. W., II, 1913, General Electric Company.....Schenectady, New York
Hastings, Alice A., III, 1905, Graduate Student.....Stillwater, Oklahoma
Hedger, H. R., I, 1913, Extension Department A. and M.....Stillwater, Oklahoma
Hemphill, Ora L., II, 1909, Miller Engineering Company.....Little Rock, Arkansas
Herrick, H. C., II, 1912, Salesman for Maxwell Motor Car Company.....Oklahoma City, Oklahoma
Herron, L. G., I, 1913, Graduate Asst. A. and M.....Stillwater, Oklahoma
Hiet, M. E., II, 1912, General Electric Company.....New York, N. Y.
Hildebrand, L. E., II, 1910, General Electric Company.....Pittsfield, Massachusetts
(Hill) Bartlett, Vera May, VI, 1912, at Home.....Rye, Colorado
Hines, E. G., II, 1905, Merkle-Hines Machinery Company.....Kansas City, Kansas
Hobbs, Hugh, II, 1912, Missouri Pacific Ry.....Little Rock, Arkansas
Hoke, C. E., I, 1907, Farm Management Investigation, U. S. Department of Agriculture.....Oklahoma City, Oklahoma
Hoke, G. E., V, 1911, Student Law School, O. U.....Norman, Oklahoma
Hoke, H. G., II, 1907, Westinghouse Electric Company.....Wilkinsburg, Pennsylvania
Hoke, Mac, V, 1912, Instructor in Science.....Idaho Falls, Idaho
Holmes, L. D., V, 1908, Athletic Director.....Depauw, Indiana
Holmes, O. W., I, 1908, Instructor in Dairying, University of Washington.....Pullman, Washington
Hoover, G. W., III, 1903, Asst. Bureau of Chemistry.....Washington, D. C.
Hopps, C. W., II, 1911, General Electric Company.....Schenectady, New York
House, R. M., II, 1903, Hardware Business.....Bristow, Oklahoma
Houston, Mamie G., III, 1903, Instructor in High School.....Albany, Oregon
Howell, Carl, II, 1906, Pacific Light and Power Company.....Los Angeles, California
Hubler, W. A., V, 1910, Farmer.....Fairfax, Oklahoma
Huffnagel, Chas., I, 1913, Graduate Student Ohio University.....Columbus, Ohio
Hunt, Gertrude, III, 1902, Instructor in High School.....San Diego, California
Hurst, B. B., III, 1910, Hospital Steward, U. S. Navy.....Sitka, Alaska
(Hurst) Suits, Nina B., III, 1903, at Home.....Beeville, Texas

Ives, F. H., I, 1909, Professor at Central State Normal.....Edmond, Oklahoma

Jacob, A. W., I, 1913, Instructor in High School.....Madison, S. D.
Jacob, L. O., I, 1913, Instructor in High School.....Anoka, Minnesota
James, Helen, IV, 1913, Student St. Mary's of the Woods.....Terre Haute, Indiana
Janeway, G. M., II, 1902, Banker.....Skiatook, Oklahoma
Janeway, Helen, IV, 1913, Post Graduate A. and M.....Stillwater, Oklahoma
Janeway, Lenore, IV, 1908, at Home.....Stillwater, Oklahoma
Jarrell, A. E., II, 1896, Santa Fe System.....Pueblo, Colorado
(Jarrell) Hartman, Mary, III, 1903, at Home.....Tulsa, Oklahoma
Jeffords, S., I, 1912, Federal Farm Demonstrator.....Muskogee, Oklahoma
Jessee, W. B., I, 1911, Dept. of Animal Husbandry.....Washington, D. C.
Jewitt, Kate A., III, 1901, Principal of High School.....Udall, Kansas
Johnston, J. C., III, 1905, Physician.....Lawton, Oklahoma
Johnson, Norma N., V, 1909, Post Graduate work at A. and M.....Stillwater, Oklahoma
Johnson, Laura W., VI, 1913, at Home.....Ada, Oklahoma
(Johnson) Crosby, Lucy, V, 1912, at Home.....Loveland, Ohio
Johnson, S. B., I, 1912, Agriculturist, State College.....Fargo, North Dakota
Jones, C. V., III, 1902, Lawyer.....Clay Center, Kansas
Jones, E. L., II, 1904, Manager Columbus Electric Car Co.....San Francisco, California
Jones, S. C., II, 1910, Allis-Chalmers Company.....Norwood, Ohio

Kenyon, R. S., II, 1903, Electrician for New Orleans Street Railway Company.....New Orleans, Louisiana
Kenyon, R. E., II, 1910, Salesman, General Electric Co.....San Francisco, California
Kerr, R. H., I, 1903, Chemist, Department of Agriculture.....Washington, D. C.
Kezer, C. L., III, 1901, Superintendent of City Schools.....Stillwater, Oklahoma
Kidd, J. W., II, 1904, Draftsman.....El Paso, Texas
Kilpatrick, E., I, 1912, Instructor in Agriculture.....Long Prairie, Minnesota
Kinder, W. E., III, 1903, Instructor in Secondary School.....Helena, Oklahoma
King, Beverly D., II, 1910, Norris Engineering Company.....Wharton, Texas
Kirkpatrick, Cecil, IV, 1909, Domestic Science High School.....Chickasha, Oklahoma
(Kirkpatrick) Anderson, V. Victoria, V, 1910, at Home.....Guymon, Oklahoma
Kirkpatrick, Katie C., V, 1911, Instructor in High School.....Pond Creek, Oklahoma
Kooken, E. R., I, 1910, Instructor in Agriculture.....Bonham, Texas

Kolshorn, Agnes, V, 1913, Student Columbia University.....New York, N. Y.
Knauss, E. J., I, 1905, Druggist.....Kansas City, Missouri
Knoblock, F. L., II, 1912, Architectural Engineer.....Beaumont, Texas
Krall, J. A., I, 1913, Graduate Student Iowa State College.....Ames, Iowa
Kratka, Ralph, III, 1902, Farmer.....Rocky Ford, Colorado

Lahman, W., V, 1909, Manager of Ice and Coal Business.....Pawnee, Oklahoma
Lane, F. P., I, 1913, Federal Farm Demonstrator.....Newton, Kansas
Lantz, A. G., I, 1907, Farmer.....Willows, California
Lantz, C. R., II, 1907, Westinghouse Electric and Mfg Co.....Seattle, Washington
Leicht, H. S., II, 1911, U. S. Geological Survey.....Soledad, California
Leteer, C. R., I, 1908, Manager U. S. Experiment Station.....San Antonio, Texas
Lewis, Arthur C., III, 1901, Entomologist.....Atlanta, Georgia
Lewis, Carrie, III, 1905, Teacher.....Enid, Oklahoma
Lewis, E. G., I, 1896, Banker.....Tulsa, Oklahoma
(Lewis) Johnson, Myrtle I., IV, 1910, at Home.....Fargo, North Dakota
Lincoln, H. J., II, 1903, Santa Fe Railway Company.....Chicago, Illinois
Lindsay, R. V., II, 1909, Farmer.....Kingfisher, Oklahoma
(Losey) Barnes, Portia M., IV, 1913, at Home.....Stillwater, Oklahoma
Lovell, Thos. J., II, 1912, Draftsman Southern California Edison Company
.....Los Angeles, California
Lovett, A. E., I, 1904, Federal Farm Demonstrator.....Checotah, Oklahoma
Lovett, A. L., I, 1908, Asst. Entomologist State College.....Corvallis, Oregon
Lowman, E. F., V, 1912, Principal of High School.....Pawhuska, Oklahoma
Lowry, C. H., III, 1902 Lawyer.....Stillwater, Oklahoma
Lowry, Ethel, IV, 1913, Graduate Student A. and M.....Stillwater, Oklahoma
(Lowry) McKee, Theo, III, 1906, at Home.....Houston, Texas
Lynch, H. W., II, 1912, Commonwealth-Edison Company.....Chicago, Illinois

McArthur, C. L., V, 1911, Asst. Bacteriologist State College.....Fayetteville, Arkansas
McBride, J. D., V, 1911, Clerk.....Stillwater, Oklahoma
McBride, H. F., II, 1903, Supt. of Guanajuato Power and Electric Company.....Guanajuato, Mexico
McBride, Iva., IV, 1910, Domestic Science High School.....Douglas, Arizona
McBride, J. F., II, 1904, Guanajuato Power and Electric Company.....
.....Guanajuata, Mexico
McCall, J. G., I ,1908, Agriculturist in High School.....Blooming Prairie, Minnesota
McCaslin, W. W., II, 1912, Electrical Engineer, Stuart, James & Cook.....
.....Bluefield, West Virginia
McElroy, C. H., I, 1906, Asst. in Bacteriology, A. and M.....Stillwater, Oklahoma
McIntyre, J. C., II, 1911, Instructor in Oklahoma Institute of Technology
.....Tonkawa, Oklahoma
McIlvain, Chas., I, 1913, Farmer.....Ponder, Texas
McKay, M. B., V, 1911, Graduate Student University of Wisconsin.....
.....Madison, Wisconsin
McMullin, S. I., II, 1909, Lumber Business.....Manchester, Oklahoma
McPheeters, A. A., I, 1912, Agriculture in High School.....Two Harbors, Minnesota
McPheeters, Marguerite, IV, V, VI, 1912, Head of Domestic Science Dept. Secondary School.....Helena, Oklahoma
McPheeters, Martha, IV, 1913, Extension Division A. and M.....Stillwater, Oklahoma
McPheeters, Wm. H., II, 1909, Instructor Texas A. and M.....College Station, Texas
McReynolds, A. B., III, 1899, Publisher and Editor.....King City, California
McReynolds, S. A., III, 1902, Musician.....Piedmont, West Virginia

Malone, J. A., I, 1900, President of Secondary Agricultural School.....
.....Warner, Oklahoma
Marple, Vern, III, 1904, Banker.....Meade, Oklahoma
Marsh, Venus Lee, V, 1913, Teacher City Schools.....Stillwater, Oklahoma
Mayall, S. J., II, 1911, Pacific Telephone and Telegraph Co.....Los Angeles, California
Means, P. E., II, 1908, Engineer.....Hurby, New Mexico
Melton, W. A., II, 1913, General Electric Company.....Schenectady, New York
Merrill, A. J., II, 1913, Asst. Engr., American Coal Co.....McComas, West Virginia
Merry, Geo., V, 1913, Graduate Student A. and M.....Stillwater, Oklahoma
Merrifield, F. R., I, 1913, Farmer.....Enid, Oklahoma
Merydith, C. S., I, 1912, Agriculturist, Haskell State School of Agriculture
.....Broken Arrow, Oklahoma
Miller, Bertha, III, 1906, at Home.....Beeville, Texas
*Miller, L. C., I, 1900.....Washington, D. C.
Miller, Maud I., III, 1903, at Home.....Beeville, Texas
Miltimore, Cora A., III, 1899, Librarian A. and M College.....Stillwater, Oklahoma
Mitchell, L. C., V, 1909, Chemist, U. S. Department of Agriculture....Washington, D. C.
Mitschrich, M., II, 1913, Westinghouse Electric Mfg. Co.....Wilkinsburg, Pennsylvania
Morgan, Bernice, III, 1904, Instructor in High School.....Muskogee, Oklahoma
Moore, A. I., II, 1908, Superintendent of Schools.....Hennessey, Oklahoma
Moore, J. A., V, 1911, Western Milling Company.....Kansas City, Missouri

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Moore, R. H., V, 1908, Real Estate Agent.....Stillwater, Oklahoma
Moote, T. P., II, 1910, Engineer.....El Campo, Texas
Morris, O. M., I, 1896, Professor of Horticulture, A. and M.....Pullman, Washington
Morris, Clinton, III, 1898, Chemist, Iron Foundry.....Goodrich ,Tennessee
(Morrison) Berry, Edwina, V, 1907, at Home.....Stillwater, Oklahoma
*Morrow, C. E., II, 1903.....Stillwater, Oklahoma
(Morrow) Watkins, Jessie, III, 1903, at Home.....Enid, Oklahoma
Moskedoll, Olga, IV, 1911, Domestic Science in High School.....Fort Worth, Texas
Myers, S. E., III, 1899, Real Estate Agent.....Guthrie, Oklahoma

Needham, Ollie, II, 1909, Westinghouse Electric Mfg. Co.....Pittsburgh, Pennsylvania
Nellis, H. M., II, 1912, Isthmian Canal Commission.....Carozal, C. Z., Panama
Nelson, Cyrus, III, 1903, Physician.....Houston, Texas
(Nelson) Chandler, Lila E., III, 1903, at Home.....Washington, D. C.
Nelson, Abigail E., III, 1904, Druggist.....Washington, D. C.
Nelson, Stella, III, 1903, Druggist.....Washington, D. C.
Nelson, J. A., III, 1905, Lawyer.....Washington, D. C.
Newmann, Leo M., II, 1910, Instructor Missouri University.....Columbia, Missouri
Newmann, Iva F., IV, 1912, Student Missouri University.....Columbia, Missouri
Newcomb, Bonnie, III, 1908, Instructor in High School.....Wren, Washington
Newland, Mrs. Minnie, V, 1912, Teacher.....Oregon
(Nielson) Taylor, Mary A., III, 1903, at Home.....Perry, Oklahoma
North, Esther A., III, 1903, Post Graduate A. and M. College.....Stillwater, Oklahoma
North, Kate, IV, 1912, Domestic Science in High School.....Tulsa, Oklahoma

O'Brien, G. E., I, 1913, Graduate Student Iowa State College.....Ames, Iowa
Olentine, Fred B., III, 1906, Rush Medical College.....Chicago, Illinois
Osborn, John, III, 1906, U. S. War Department.....Fort Stevens, Oregon
(Oschman) Ross, Hattie, III, 1907, at Home.....Claremore, Oklahoma
Oschman, Maude, V, 1912, Instructor in Public School.....Miami, Oklahoma
Otey, M. J., III, 1902, Banker.....Frankfort, Oklahoma
Oursler, A. C., I, 1910, Alta Vista Creamery Company.....Fort Worth, Texas
Oursler, Elizabeth, VI, 1912, Teacher.....Mannford, Oklahoma

Painter, Ray H., V, 1912, Asst. Entomologist A. and M.....Stillwater, Oklahoma
Payne, L. F., I, 1912, Poultry Superintendent A. and M.....Stillwater, Oklahoma
Pearson, Thirza, IV, 1913, Instructor in Deaf and Dumb Institute.....Sulphur, Oklahoma
Peck, O. T., II, 1908, Book Business.....Stillwater, Oklahoma
Pigg, H. F., II, 1902, Electrical Engineer, Witherbee, Sherman & Company.....Mineville, New York
Pochall, R. A., II, 1910, Instructor in Civil Engineering, Perdue University.....Lafayette, Indiana
Potts, F. M., I, 1912, Farmer.....Dexter, Michigan
Priest, Stella, V, 1912, Domestic Science in Public School.....Okemah, Oklahoma

Ratliff, J. A., I, 1907, Asst. Agronomist, University of Nebraska.....Lincoln, Nebraska
Rector, F. L., III, 1902, Great Bear Water Works.....Brooklyn, New York
Reed, Fred, II, 1911, Oklahoma Gas and Electric Company....Oklahoma City, Oklahoma
Ried, Grace, IV, 1913, Instructor in High School.....Houston, Texas
Reeve, C. T., II, 1907, Switchman, Federal St. & Tr. Co.....Hot Springs, Arkansas
Reeve, H. W., I, 1907, Farmer.....Choctaw, Oklahoma
*Regnier, C. F., III, 1899.....Stillwater, Oklahoma
Regnier, M. A., II, 1911, Instructor in High School.....Los Angeles, California
Rhodes, T. W., II, 1913, General Electric Company.....Schenectady, New York
Richards, Hattie, IV, 1912, Instructor in High School.....Brigham City, Utah
Ritter, L. B., V, 1910, Instructor A. and M. College.....Stillwater, Oklahoma
Robinson, A. G., III, 1903, Assayer.....Tecopa, California
(Rogers) Faulds, Almira, IV, 1910, at Home.....Enid, Oklahoma
Ross, J. K., II, 1910, Hardware Business.....Madill, Oklahoma
Ross, Sam I., II, 1911, Instructor in Manual Training.....Fort Collins, Colorado
Rudd, E. L., II, 1912, Western Electric Company.....Chicago, Illinois
(Ruble) Warren, Bertha, III, 1903, at Home.....Ada, Oklahoma
Rush, W. S., II, 1905, President Rush Marine Signal Company.....New York, N. Y.
Ryno, Madeline, IV, 1913, Instructor in High School.....Stillwater, Oklahoma

Santee, L. A., II, 1913, Draftsman.....Muskogee, Oklahoma
Schreiber, S. C., I, 1913, Fruit Farmer.....Harrisburg, West Virginia
Schnurr, C., II, 1911, U. S. Geological Survey.....Sacramento, California
Scott, E. M., II, 1913, Commonwealth-Edison Company.....Chicago, Illinois
Seeger, E. E., I, 1913, Agriculturist, Connell State School of Agriculture.....Helena, Oklahoma
Selement, F. G., II, 1910, Oklahoma Street Railway Co.....Oklahoma City, Oklahoma
(Semke) Harrington, Grace E., III, 1906, at Home.....Covington, Oklahoma

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Shallenberger, Garvin, V, 1912, Instructor in High School.....Okemah, Oklahoma
Shaw, Anna, VI, 1910, Domestic Science in High School.....Tishomingo, Oklahoma
Short, Robt., I, 1913, President Secondary School of Agriculture.....Lawton, Oklahoma
Shiflett, R. C., I, 1911, Federal Farm Demonstration Work.....Kingfisher, Oklahoma
Shiflett, H. D., I, 1913, Farmer.....Cruce, Oklahoma
Shively, R. Rex., III, 1902, Professor of Chemistry, Pittsburgh University .....Pittsburgh, Pennsylvania
Sieglinger, J., I, 1913, Graduate Asst. in Agronomy.....Manhattan, Kansas
Smeltzer, C. E., III, 1902, Rush Medical College.....Chicago, Illinois
*Smith, S. G., III, 1906.....Stillwater, Oklahoma
Smith, C. Ray, V, 1910, Real Estate Agent.....Stillwater, Oklahoma
Smith, J. G., I, 1911, Real Estate.....Dallas, Texas
Smith, R. R., V, 1913, Graduate Student Harvard.....Cambridge, Massachusetts
Snyder, Georgia, IV, 1913, Instructor in High School.....Broken Arrow, Oklahoma
Spalding, J. A., I, 1905, Farmer.....Los Angeles, California
Spaulding, H. E., V, 1910, Station Chemist.....College Station, Texas
Spidel, J. M., I, 1910.....
Spohn, R. E., II, 1910, Commonwealth-Edison Mfg. Company.....Chicago, Illinois
Springer, Mamie, V, 1909, Instructor in High School.....Cushing, Oklahoma
Stebbins, A. A., II, 1909, Farmer.....Garber, Oklahoma
Stebbins, R. R., V, 1909, Farmer.....Enid, Oklahoma
Stewart, F. L., II, 1909, Roxana Gas and Oil Company.....Tulsa, Oklahoma
Stevens, H. I., III, 1904, Chemist, St. Louis Surface and Paint Company .....St. Louis, Missouri
(Stewart) Jessee, Annabel, V, 1911, at Home.....Washington, D. C.
Stiles, G. E., III, 1900, Bureau of Chemistry, Department of Agriculture .....Denver, Colorado
(Stover) Gougler, Ida M., V, 1908, at Home.....Manhattan, Kansas
Stover, Nannie, V, 1909, Teacher High School.....Cushing, Oklahoma
Straub, Otto, I, 1910, Agriculturist, Secondary School.....Helena, Oklahoma
(Swope) Dolde, Emma H., III, 1898, at Home.....Leavenworth, Kansas
Swope, H. M., II, 1913, Surveyor A., T. & S. F. Ry Co.....Topeka, Kansas

Talbot, A. E., I, 1912, Asst. in Dairying, A. and M. College.....College Station, Texas
Talbot, Nora A., VI, 1910, Instructor in High School.....Muskogee, Oklahoma
Talbot, Gertrude, VI, 1913, Instructor in High School.....McAlester, Oklahoma
(Tankersley) McAninch, Lola M., III, 1900, at Home.....Edmond, Oklahoma
Tarr, W. A., II, 1904, Professor of Geology, Missouri University....Columbia, Missouri
Tate, J. A., II, 1909, Instructor in University of Wisconsin.....Madison, Wisconsin
(Taylor) Ellis, Jeanette, III, 1907, at Home.....Nashville, Tennessee
Temming, Ruth E., IV, 1912, Instructor in High School.....Tahlequah, Oklahoma
(Thatcher) Bost, Jessie O., III, 1897, at Home.....Alva, Oklahoma
Thompson, Eugene, I, 1913, Agriculturist Secondary School.....Warner, Oklahoma
Thornberry, J. W., I, 1904, Buttermaker Townsend Creamery.....Astoria, Oregon
Thornberry, W. T., II, 1902, Building Contractor.....Kansas City, Missouri
(Thoroughman) Williams, Maude E., III, 1904, at Home.....Perkins, Oklahoma
Tibbetts, F, J., II, 1910, Westinghouse Salesman.....El Paso, Texas
Tillottson, A. K., V, 1912, Good Roads Chemistry Laboratory.....Washington, D. C.
Tillottson, Bonnie, III, 1909, Nurse.....Mount Lebanon, Louisiana
Tongue, G. F., II, 1912, Stone & Webster Eng. Corporation.....Dallas, Texas
Truman, H. L., II, 1908, General Electric Company.....New York, N. Y.
Trent, Dover, V, 1913, Principal High School.....Stigler, Oklahoma
Trueax, C. P., II, 1911, Commonwealth-Edison Company.....Chicago, Illinois

Utt, A. G., II, 1912, Westinghouse Electric and Mfg. Co.....Wilkinsburg, Pennsylvania

Vandervoort, L. A., II, 1912, Western Electric Company.....Chicago, Illinois
Vezey, E. E., II, 1912, Professor of Manual Training.....Helena, Oklahoma

Walker, Belle, III, 1902, at Home.....Oklahoma City, Oklahoma
Walker, Florence K., III, 1903, U. S. Federal Department....Oklahoma City, Oklahoma
Walker, Ethel, III, 1902, Teacher in High School.....Montrose, Colorado
Walker, Fay B., III, 1904, Graduate Student, A. and M.....Stillwater, Oklahoma
(Walker) Swinford, Velma, III, 1901, at Home.....Stillwater, Oklahoma
Walker, K. D., I, 1913, U. S. Indian Farmer.....Busby, Montana
Walker, Veda, III, 1906, Instructor in High School.....Los Angeles, California
*Walters, Julia, IV, 1913.....Stillwater, Oklahoma
Walters, Marguerite P., IV, 1910, at Home.....Los Angeles, California
Walters, Minnie D., IV, 1910, at Home.....Los Angeles, California
Watrous, Robt. C., II, 1910, Jewelry Business.....Broken Arrow, Oklahoma
Watson, D. H., II, 1911, U. S. Geological Survey.....Phoenix, Arizona
Watson, Florence, VI, 1913, Instructor in High School.....Red Lake, Minnesota
Watson, W. E., I, 1913, Instructor in Agriculture, High School.....Herman, Minnesota
Watson, W. P., II, 1913, Graduate Student, Massachusetts Institute of Technology.....Boston, Massachusetts

*Deceased.

Weaver, G. E., I, 1913, Graduate Student A. and M. College.....Stillwater, Oklahoma
Webb, A. E., I, 1912, Instructor in Agriculture.....Sleepy Eye, Minnesota
Werner, Ida A., VI, 1912.....
Wells, E. E., II, 1913, Gary Coal and Coke Company.....Gary, West Virginia
White, H. H., II, 1913, Surveyor, Railroad.....Poplar Bluff, Missouri
Whiteside, A., I, 1913, Instructor in Agriculture, High School....Sauk Fort, Minnesota
Wiar, Pearl L., III, 1907, Stenographer.....Oklahoma City, Oklahoma
Wiley, R. C., III, 1905, Asst. Station Chemist.....Manhattan, Kansas
Wikle, G. F., II, 1904, Master Mechanic and Electrical Engineer, Honolulu Rapid Transit and Land Company.....Honolulu, Hawaii
Wikle, H. H., II, 1911, General Electric Company.....Schenectady, New York
Wills, Doris, II, 1910, Westinghouse Electric and Mfg. Co.....Pittsburgh, Pennsylvania
Williams, Guy P., II, 1910, Commonwealth-Edison Company.....Chicago, Illinois
Williams, R. L., I, 1913, at Home.....Stillwater, Oklahoma
Wilson, Clay E., VI, 1911, Instructor in High School.....Kenton, Oklahoma
Wilson, Jas., III, 1906, Bacteriologist in Geneva Experiment Station.....Geneva, New York
Winters, N. E., I, 1911, Farm Superintendent.....Houston, Texas
Wirfs, Clair, IV, 1913, Domestic Science, High School.....Tahlequah, Oklahoma
(Wise) Diggs, Blanche, III, 1898, at Home.....Stillwater, Oklahoma
(Wise) Lantz, Mable, IV, 1909, at Home.....Seattle, Washington
Withers, Clay A., III, 1904, Dentist and Instructor.....Littleton, Colorado
Wood, C. A., II, 1908, County Surveyor and Farmer.....Perry, Oklahoma
Woodson, M. M., III, 1902, Superintendent of Farm Instruction, State Board of Agriculture.....Oklahoma City, Oklahoma
Worthington, W. H., II, 1910, J. I. Case Threshing Machine Company.....Odessa, Russia
Wilson, H. E., II, 1910, Transitman, A., T. & S. F. Ry. Co.....Marceline, Missouri
Woodworth, Clyde M., I, 1910, Graduate Student Wisconsin University.....Madison, Wisconsin
Woodworth, J. E., I, 1904, U. S. Department of Agriculture.....Guthrie, Oklahoma
Wright, Louise, VI, 1912, Instructor in High School.....Blackwell, Oklahoma
Wright, N. W., VI, 1912, Teacher in High School.....Bonham, Texas

Znamenacheck, Ed, II, 1908, Commonwealth-Edison Company.....Chicago, Illinois

ROLL OF STUDENTS

Seniors

Baker, Delarue	Science and Literature	Stillwater
Barnes, H Dale	Agricultural	Banner
Bellis, Ida O	Teachers' Normal	Stillwater
Brannin, Louis	Agriculture	Dallas, Texas
Brodell, A. C	Teachers' Normal	Keystone
Brooke, Hazel	Science and Literature	Perkins
Campbell, M. B	Agricultural	Minco
Campbell, Rhea	Teachers' Normal	Guthrie
Carney, Zora	Domestic Science and Art	Rushville, Indiana
Clausen, Nellie C	Domestic Science and Art	Stillwater
Conklin, Harry E	Engineering	Chandler
Dale, Ernest B	Engineering	Headrick
DeBord, Geo. G	Science and Literature	Stillwater
Donart, Gladys	Domestic Science and Art	Stillwater
Drummond, F. G	Science and Literature	Hominy
Dunlap, G. B	Teachers' Normal	Red Oak
Durham, Pearl E	Domestic Science and Art	Stillwater
Epperson, J. H	Science and Literature	Stillwater
Foster, Nellie	Agricultural	Stillwater
Friedemann, Wm. G	Science and Literature	Stillwater
Getgey, John	Science and Literature	Helena
Graham, Douglas S	Science and Literature	Stillwater
Graham, Quentin	Engineering	Stillwater
Granberry, C. E	Teachers' Normal	Lake, Mississippi
Hagar, W. Edgar	Agricultural	Stillwater
Hall, Ethel	Teachers' Normal	Lone Wolf
Hannifin, Edna	Domestic Science and Art	Broken Arrow
Harris, Inez June	Teachers' Normal	Stillwater
Herndon, May	Domestic Science and Art	Garvin
Hiet, Sadie	Domestic Science and Art	Stillwater
Hoke, Rhoda	Domestic Science and Art	Quay
Holford, Ina C	Teachers' Normal	Madill
Hollomon, Gertrude	Domestic Science and Art	Stillwater
Horton, Charlotte	Science and Literature	Mekusukey
Houck, Afton	Teachers' Normal	Stillwater
Huffman, Lewis D	Science and Literature	Vanduser, Missouri
Jackson, W. E	Agricultural	Coweta
Jeffords, Mary	Domestic Science and Art	St. Louis, Missouri
Jones, Daisy L	Domestic Science and Art	Stillwater
Jones, Jeanne H	Teachers' Normal	Stillwater
Jordan, Chas. N	Teachers' Normal	Meridian, Mississippi
Kennon, W. Dennis	Teachers' Normal	Stillwater
Kilpatrick, May	Domestic Science and Art	Hunter
Lahman, Ruth	Science and Literature	Stillwater
Marker, Walter	Agricultural	Stillwater
McClure, Marguerite	Science and Literature	McAlester
McLelland, Mathilde	Teachers' Normal	Stillwater
McLelland, Wm	Agricultural	Stillwater
Miller, Ella	Teachers' Normal	Stillwater
Miller, Esther	Domestic Science and Art	Stillwater
Miller, Hilma	Domestic Science and Art	Stillwater
Morrow, Bertha	Domestic Science and Art	Broken Arrow
Morrow, Ella M	Domestic Science and Art	Perkins

Neumann, Eleanor	Science and Literature	Stillwater
Oursler, Anna	Science and Literature	Stillwater
Peck, Clarence	Agricultural	Stillwater
Reynolds, E. B	Agricultural	Stillwater
Reynolds, O. H	Engineering	Stillwater
Rockey, Nellie	Teachers' Normal	Stillwater
Roeser, Harry	Engineering	Stillwater
Russell, Carl	Agricultural	Warner
Schwark, Conrad	Agricultural	Stillwater
Shaw, Ava	Teachers' Normal	Berwick, Texas
Shiflett, R. F	Agricultural	Cruce
Shiry, E. E	Teachers' Normal	Shattuck
Smith, John G	Agricultural	Chickasha
Smith, Elwin J	Engineering	Oklahoma City
Spohn, Callie M	Domestic Science and Art	Stillwater
Stevens, Margaret	Domestic Science and Art	Norborne, Missouri
Stinson, C. C	Agricultural	Comanche
Taylor, Inez	Domestic Science and Art	Stillwater
Tourtellotte, Evert	Agricultural	Stillwater
Vance, L. R	Agricultural	Blackwell
Webb, Howard F	Agricultural	Broken Arrow
Webb, Leone	Domestic Science and Art	Broken Arrow
Whipple, A. F	Science and Literature	Stillwater
Whitlock, Ernest	Science and Literature	El Reno
Wise, Oscar I	Agricultural	Stillwater
Wood, R. A	Engineering	Lahoma
Word, Gurtha	Science and Literature	Stillwater
Young, Kenneth R	Engineering	Stillwater

Juniors

Abernathy, Ora	Domestic Science and Art	Stillwater
Abernathy, Oscar	Science and Literature	Stillwater
Allen, Roy C	Agricultural	Medford
Anderson, A. A	Engineering	Enid
Andrews, Maud	Domestic Science and Art	Okeene
Bandel, Maud	Domestic Science and Art	Ramona
Bass, Lillian M	Teachers' Normal	Enid
Best, Robt. T	Agricultural	Wagoner
Bishop, Willie Jaye	Domestic Science and Art	Stillwater
Blackburn, Joe T	Teachers' Normal	Nida
Boyd, Nina V	Teachers' Normal	Hooker
Boydstun, Ethel	Domestic Science and Art	Caddo
Brandon, Edna	Domestic Science and Art	Stillwater
Breidenthal, Hazel	Teachers' Normal	Stillwater
Brian, Naomi	Domestic Science and Art	Newkirk
Brisby, Cassie K	Domestic Science and Art	Enid
Broemel, Agnes	Teachers' Normal	Stillwater
Broich, W. F	Agricultural	Big Stone City, S. Dak.
Brown, Oliver C	Engineering	Okmulgee
Browning, J. M	Agricultural	Stillwater
Butler, Joe	Engineering	Omega
Cass, Early R	Agricultural	Tulsa
Choate, Geo. R	Agricultural	Indianola
Clemmer, H. J	Agricultural	Ponca
Conn, Julian	Engineering	McCurtain
Connell, James	Agricultural	Stillwater
Crawford, G. L	Agricultural	Ashland, Mississippi
Cunningham, Katherine	Science and Literature	Glencoe
Curnutt, Minnie	Teachers' Normal	Stillwater
Davis, Geo	Engineering	Stillwater
Doty, Harold	Agricultural	Stillwater
Drummond, Alfred A	Agricultural	Hominy
Edson, E. O	Agricultural	Stillwater
Elston, W. B	Engineering	Shawnee

Fellows, Keith	Engineering	Stillwater
Fennema, Nick	Agricultural	Lawton
Finch, Laura	Domestic Science and Art	Chandler
Fisher, Anna	Domestic Science and Art	Stillwater
Fisher, John	Engineering	Stillwater
Forney, Chas	Agricultural	Kingfisher
Forrester, W. E	Agricultural	Stratford
Foster, Faye F	Agricultural	Perry
Freeman, Ray	Agricultural	Guthrie
Friedemann, Theodore	Science and Literature	Stillwater
Garrett, Emmett	Science and Literature	Stillwater
Graham, Earl E	Agricultural	Marietta
Griffeth, Minnie	Domestic Science and Art	Stillwater
Griffeth, Ross J	Science and Literature	Stillwater
Harrison, Mitchell	Science and Literature	Whitefield
Havenstrite, R. W	Agricultural	Lovell
Hays, Glenn G	Science and Literature	Glencoe
Henson, Ethel	Domestic Science and Art	McLoud
Heston, Adrian	Engineering	Stillwater
Hilgenberg, L. W	Science and Literature	Stillwater
Holford, F. O	Agricultural	Madill
Holton, Pauline	Domestic Science and Art	Helena
Howard, Virginia	Domestic Science and Art	St. Louis, Missouri
Huddleson, I. F	Science and Literature	Kremlin
Irvin, Gladys	Teachers' Normal	Stillwater
Jacobs, Ethelwyn	Teachers' Normal	Stillwater
James, Cornelia	Science and Literature	Stillwater
Jones, Eva	Teachers' Normal	Stillwater
Jones, Lloyd	Science and Literature	Blackwell
Katz, Henrietta	Science and Literature	Sapulpa
Kile, Eugene	Teachers' Normal	Cushing
Kite, W. C	Science and Literature	Perry
Knight, Lillian	Teachers' Normal	Stillwater
Knoblock, Cecil C	Science and Literature	Stillwater
Kooken, Katherine	Domestic Science and Art	Kingfisher
Krepps, Sam'l J	Engineering	Oklahoma City
Kyger, Helen	Science and Literature	Blackwell
Lovell, C. M	Engineering	Waukomis
Mannheimer, Ruth	Domestic Science and Art	Pawnee
Mantle, David L	Engineering	Adair
Mantle, Guy	Agricultural	Adair
Marsh, Corrine	Domestic Science and Art	Stillwater
Marx, Loyd S	Engineering	Pawnee
Mayer, Sylvia	Domestic Science and Art	Chandler
McBride, Lillian	Domestic Science and Art	Stillwater
McBride, Pearl	Domestic Science and Art	Stillwater
McBride, R. Verner	Agricultural	Stillwater
Minton, H. Lee	Science and Literature	Enid
Mitchell, Joe	Teachers' Normal	Hickory
Morrison, Virginia	Teachers' Normal	Stillwater
Mullen, Clyde	Agricultural	Lawton
Needham, I. H	Agricultural	Oklahoma City
Oldham, Albert E	Science and Literature	Stillwater
Olmstead, M. E	Science and Literature	Marshall
Orr, Paul F	Science and Literature	Lawton
Overstreet, Maggie	Domestic Science and Art	Cowlington
Patterson, W. H	Engineering	Okemah
Payne, Wm. T	Science and Literature	Oklahoma City
Peck, H. L	Engineering	Stillwater
Powers, Hazel	Teachers' Normal	Perry
Radnish, Helen	Domestic Science and Art	Stillwater
Rapp, Workman	Agricultural	Stillwater
Reeve, John R	Engineering	Dewey
Reynolds, Fred S	Agricultural	Doss, Louisiana
Roberts, Clarence	Agricultural	Lawton
Rogers, Guy F	Science and Literature	Ames
Rush, Ethel	Science and Literature	Stillwater
Russell, Christie	Science and Literature	Warner
Russell, Mamie	Domestic Science and Art	Warner

Schaefer, Paul	Engineering	Mountain View
Scott, Izora	Science and Literature	Stillwater
Scott, Wiley	Agricultural	Carnegie
Scruggs, P. G.	Agricultural	Geronimo
Selph, Nina	Domestic Science and Art	Stillwater
Simank, Ben O.	Engineering	Fayetteville, Texas
Simank, E. W.	Engineering	Fayetteville, Texas
Smart, Faye	Domestic Science and Art	Stillwater
Smith, Arthur R.	Agricultural	Haskell
Spear, Maude	Engineering	Winnebago, Nebraska
Spencer, Earl L.	Agricultural	Stillwater
Stallings, M. Ida	Domestic Science and Art	Morrilton, Arkansas
Stanley, May	Domestic Science and Art	Wister
Thompson, Pauline	Domestic Science and Art	Ralston
Tingle, J. T.	Agricultural	Meridian, Mississippi
Van Eaton, Marjorie M.	Science and Literature	Fort Cobb
Venters, H. D.	Science and Literature	Bader, Illinois
Ware, Alta B.	Domestic Science and Art	Stillwater
Warren, Jessie	Domestic Science and Art	Adair
Watkins, J. E.	Teachers' Normal	Canute
Weber, A. G.	Science and Literature	Calumet
White, J. P.	Agricultural	Lott, Texas
Williamson, E.	Engineering	Stillwater
Woodson, J. Clay	Engineering	Walters
Woodworth, L. E.	Agricultural	Perry
Young, Joseph E.	Engineering	Stillwater

Sophomores

Abernathy, Eunice E.	Science and Literature	Stillwater
Adams, Z. K.	Domestic Science and Art	Tishomingo
Anderson, Paul K.	Engineering	Gotebo
Andrew, C. S.	Agricultural	Stillwater
Andrews, Myron	Agricultural	Okeene
Appleget, Alan	Engineering	Woodward
Arabajian, H. K.	Agricultural	Stillwater
Bailey, Georgia	Teachers' Normal	Miami
Barker, Ina E.	Teachers' Normal	Stillwater
Barr, Ray B.	Science and Literature	Stillwater
Bates, Floyd	Engineering	Stroud
Bauman, Charlie	Science and Literature	Bessie
Berry, David	Engineering	Chickasha
Berryhill, Roby	Domestic Science and Art	Stillwater
Beverly, A. Y.	Agricultural	Crowell, Texas
Biddison, Fannie K.	Domestic Science and Art	Pawnee
Bieberdorf, Lydia	Teachers' Normal	Orlando
Boles, Cherokee	Domestic Science and Art	Broken Arrow
Bonar, Mollie	Domestic Science and Art	Stillwater
Bowers, Anna L.	Domestic Science and Art	Stillwater
Boyd, Homer C.	Agricultural	Hooker
Boyd, Oran Cecil	Agricultural	Hooker
Boyes, Lula	Domestic Science and Art	Hebron, Nebraska
Briggs, Glen	Agricultural	Carter
Briscoe, Jack	Engineering	Perry
Brogelmann, Robt.	Agricultural	Stillwater
Brower, Laura	Domestic Science and Art	Stillwater
Bynum, Willis	Engineering	Ardmore
Campbell, Jeff	Science and Literature	Mangum
Canfield, Jesse	Science and Literature	Yale
Carter, Ernest O.	Engineering	Turley
Carter, Mary E.	Domestic Science and Art	Wakita
Chaney, Hazel	Domestic Science and Art	Roosevelt
Claridge, Clarence	Science and Literature	Danville, Kansas
Cobb, Cecil C.	Engineering	Arapaho
Cobb, P. H.	Agricultural	Wagoner
Cole, Pearl	Teachers' Normal	Cushing
Coleman, Mae	Domestic Science and Art	Little Rock, Arkansas
Corbin, Bert O.	Engineering	Stillwater
Cummins, Lenna	Teachers' Normal	Glencoe
Denny, Charlie	Agricultural	Stillwater
Denton, Elizabeth	Domestic Science and Art	Newkirk

Eyler, Jessie E.	Teachers' Normal	Collinsville
Fair, Rinaldo M.	Teachers' Normal	Stillwater
Felton, Mary	Domestic Science and Art	Hydro
First, Fern A.	Science and Literature	Stillwater
Fletcher, Aleen	Teachers' Normal	Okemah
Francis, Dora H.	Domestic Science and Art	Kingfisher
Frees, Ferris	Agricultural	Oklahoma City
Goodrich, Robt. D.	Agricultural	Norman
Gordon, Julia	Domestic Science and Art	Perkins
Gordon, May F.	Domestic Science and Art	Perkins
Graham, Janet	Domestic Science and Art	Stillwater
Graham, Mary E.	Domestic Science and Art	Pryor
Gray, Mina	Domestic Science and Art	May
Gray, Ruth	Science and Literature	Stillwater
Gray, Willis N.	Engineering	Stillwater
Green, W. J.	Agricultural	Wakita
Hall, Gertrude	Domestic Science and Art	Stillwater
Hamilton, Jennie	Domestic Science and Art	Geronimo
Harris, Clive	Teachers' Normal	Stillwater
Harris, Motier	Science and Literature	Stillwater
Harvey, David K.	Agricultural	Wyandotte
Harvey, Ruth A.	Science and Literature	Stillwater
Haun, Carl B.	Engineering	Pond Creek
Heilman, Paul L.	Teachers' Normal	Wagoner
Henderson, Georgia	Science and Literature	Yale
Henson, Tracey	Domestic Science and Art	McLoud
Heston, Lucile	Science and Literature	Stillwater
Hewett, Norma F.	Domestic Science and Art	Stillwater
Hobbs, Nona	Domestic Science and Art	San Benito, Texas
Hoffman, Helen	Domestic Science and Art	Ponca City
Horton, E. E.	Agricultural	Heath Springs, S. Carolina
Houck, Kathleen	Domestic Science and Art	Stillwater
Hueston, Cecil L.	Engineering	Stillwater
Hughes, Pauline J.	Domestic Science and Art	Stillwater
Hunter, Ernest L.	Agricultural	Broken Arrow
Ikard, Andrew	Agricultural	Chickasha
Ikard, W. L.	Agricultural	Chickasha
Ives, Earl Evert	Engineering	Avery
Jack, Eula	Domestic Science and Art	Stillwater
Jarrett, Jeff	Science and Literature	Wetumka
Johnson, Harry E.	Agricultural	Tulsa
Keho, Maurice	Agricultural	Cleveland
Kelly, Ruth I.	Teachers' Normal	Stillwater
Kenworthy, Chester	Agricultural	Muskogee
Knight, John L. R.	Science and Literature	Asher
Krone, Floy C.	Science and Literature	Sparks
Kryder, Geo. B.	Engineering	Perry
Kubik, Mabel Alice	Teachers' Normal	Jefferson
Lauderdale, Ruby	Science and Literature	Stillwater
Lazenby, Rachel	Domestic Science and Art	Shawnee
Lewis, Clarence W.	Engineering	Wakita
Lewis, Henry S.	Agricultural	Stillwater
Loomis, Alden	Agricultural	Wakita
Lowe, Ruth	Science and Literature	Shawnee
Lowe, Wm. J.	Engineering	Comanche
Lowery, Philip H.	Agricultural	Loco
Lowry, Fern A.	Science and Literature	Stillwater
Madden, Grace	Domestic Science and Art	Guthrie
Marlin, W. Ross	Science and Literature	Pawnee
Marsh, Walter R.	Engineering	Waynoka
Mason, W. J.	Engineering	Lehigh
McConnell, Marjorie	Teachers' Normal	Kansas City, Kansas
McCorkell, Ola	Teachers' Normal	Miami
Melton, Armon	Science and Literature	Stillwater
Minor, Nelson N.	Engineering	Miami
Mondy, Beulah	Domestic Science and Art	Stillwater
Moore, Gilbert P.	Science and Literature	Stillwater
Moorman, Helen M.	Domestic Science and Art	Stillwater
Morse, Hattie	Domestic Science and Art	Tonkawa
Murphy, H. D.	Agricultural	Marshall
Murphy, W. J.	Agricultural	Muskogee

Naylor, Harold	Agricultural	Hollister
Nelson, Vinita	Domestic Science and Art	Stillwater
Newell, J. P	Agricultural	Oklahoma City
Nixon, Carl	Engineering	Wapanucka
Notson, F. Carl	Engineering	Wellston
Odor, Ralph K	Agricultural	Arcadia
Owsley, Byrla	Domestic Science and Art	Stillwater
Oxley, Wm. Elijah	Agriculture	Cleo
Painter, Dorothy	Domestic Science and Art	Stillwater
Phillips, Alford	Engineering	Oklahoma City
Pierson, J. W	Agricultural	Pond Creek
Pigg, Albert	Engineering	Boynton
Powell, John J	Engineering	Cherokee
Prim, Alma	Domestic Science and Art	Wynnewood
Putman, J. E	Agricultural	Woodford
Racer, Lucille I	Domestic Science and Art	Woodward
Ransom, G. R	Agricultural	Pond Creek
Reid, Guy C	Engineering	Stillwater
Rennie, A. M	Science and Literature	Pauls Valley
Rinehart, Virgil	Agricultural	Ramona
Robinson, J. L	Agricultural	Omega
Rogers, Bertha D	Agricultural	Pawhuska
Rose, R. M	Agricultural	Stillwater
Salmans, Glenn B	Engineering	Sapulpa
Savage, O. M	Agricultural	Blackwell
Scott, J. H	Engineering	Stillwater
Scrivener, Russell	Agricultural	Maysville
Sessions, G. S	Science and Literature	Okmulgee
Sexauer, Dorothy	Domestic Science and Art	Guthrie
Sheets, Grace	Domestic Science and Art	Clinton
Shiller, H. H	Engineering	Victoria, Texas
Shively, Hazel	Domestic Science and Art	Stillwater
Singh, Brij Kishore	Agricultural	Orderly Bazaar, Benares, India
Snyder, Beryl	Teachers' Normal	Hayward
Spear, Agatha	Science and Literature	Winnebago, Nebraska
Spohn, Gladys	Science and Literature	Stillwater
Stansbury, Anna A	Science and Literature	Stillwater
Stemmons, Edith	Domestic Science and Art	Stillwater
Stout, Chas. Gordon	Engineering	Wellston
Stover, Elizabeth	Domestic Science and Art	Stillwater
Sullivan, C. C	Agricultural	Stillwater
Sutherland, Mary I	Domestic Science and Art	Miami
Thomas, J. R	Agricultural	Stillwater
Thomas, Olive B	Domestic Science and Art	Stillwater
Thompson, Grady	Agricultural	Stillwater
Tice, Eula F	Science and Literature	Hollis
Turner, Homer P	Agricultural	Lawton
Vance, Alfred W	Engineering	Blackwell
Van Eaton, Chas. W	Science and Literature	Fort Cobb
Varner, O. F	Science and Literature	Poteau
Walker, Lewis E	Science and Literature	Fort Worth, Texas
Wallace, Glenn	Agricultural	Siloam Springs, Arkansas
Walters, Joe	Engineering	Stillwater
Warren, Lydia	Domestic Science and Art	Adair
Waters, G. A	Agricultural	Pawnee
Weaver, W. C	Agricultural	Stillwater
Weber, H. K	Engineering	Bessie
Westfall, C. Howard	Agricultural	Oklahoma City
Wheat, John Jas	Engineering	Beaumont, Texas
Wheeler, Birdie	Teachers' Normal	Stillwater
Wheeler, C. P	Agricultural	Blackwell
Wiener, Lawrence	Agricultural	New York City
Wiley, Bennie	Agricultural	Broken Arrow
Williams, Armon	Engineering	Marshall
Williams, C. L	Science and Literature	Miami
Willis, C. Armand	Engineering	Cushing
Wilson, Orville G	Engineering	Cherokee
Witty, Ralph R	Science and Literature	Holdenville
Wortman, Leo S	Agricultural	Stillwater
Wright, Gertrude	Teachers' Normal	Olney

Freshmen

Abbott, Leo L.	Teachers' Normal	Niles
Abercrombie, Leona W.	Domestic Science and Art	Cashion
Abercrombie, Russell	Agricultural	Cashion
Albert, Rose	Domestic Science and Art	Stillwater
Anderson, Roy L.	Agricultural	Stillwater
Bach, Reginald	Engineering	Oklahoma City
Baker, John	Agricultural	Stillwater
Bean, Frederick W.	Engineering	Francis
Beatty, Nina	Domestic Science and Art	Stillwater
Becknell, L. E.	Agricultural	Okemah
Beyer, Senora L.	Domestic Science and Art	Crescent
Biggin, Dorothea	Teachers' Normal	Stillwater
Black, Jas. A.	Agricultural	Stillwater
Black, Virgil Sims	Engineering	Cyril
Bonar, B. B.	Agricultural	Stillwater
Bray, Clara	Domestic Science and Art	Duncan
Brazeel, J. P.	Agricultural	Okmulgee
Brewer, Chas. E.	Engineering	Stillwater
Brock, Mary Dale	Domestic Science and Art	Kendrick
Brodell, Albert P.	Agricultural	Keystone
Broemel, Richard	Agricultural	Stillwater
Brower, Maud	Domestic Science and Art	Stillwater
Bruce, Albert W.	Engineering	Pawhuska
Bryan, Ila C.	Domestic Science and Art	Stillwater
Buffington, Edith	Domestic Science and Art	Stillwater
Bussing, Elbert C.	Agricultural	Fountain
Caldwell, Virgil E.	Science and Literature	Stillwater
Carter, Grover C.	Engineering	Turley
Carter, J. T.	Agricultural	Stillwater
Chewning, Mary	Domestic Science and Art	Stillwater
Chewning, Wesley P.	Agricultural	Stillwater
Cloninger, Hugh P.	Engineering	Tulsa
Coldiron, F. H.	Agricultural	Pond Creek
Coleman, Bertha	Domestic Science and Art	Seminole
Colglazier, Ray	Agricultural	Stillwater
Conner, John H.	Teachers' Normal	Stillwater
Cox, Etta	Teachers' Normal	Tamaha
Cozad, Riley W.	Agricultural	Gerty
Crocker, Leo	Agricultural	Purdy, Missouri
Davis, Gertrude A.	Domestic Science and Art	Perkins
Dent, Gladys	Domestic Science and Art	Stillwater
Derigo, A. J.	Science and Literature	Tonkawa
Drew, Walter Wm.	Science and Literature	Ardmore
Durham, Fern	Science and Literature	Stillwater
Edwards, Jennie C.	Science and Literature	Dustin
Elkins, Jas. Wm.	Agricultural	Mountain View
Elrod, Chas.	Agricultural	Lenapah
Evans, Ruth	Domestic Science and Art	Stillwater
Fears, J. L.	Engineering	Garrison, Texas
Fellows, Reeda B.	Domestic Science and Art	Stillwater
Fisher, Enid	Domestic Science and Art	Crowson
Fisher, Florence	Domestic Science and Art	Stillwater
Flood, La Nona	Domestic Science and Art	Ponca City
Floyd, Masel	Engineering	Hastings
Fooshee, Joseph C.	Science and Literature	Coalgate
Forrester, C. T.	Agricultural	Stratford
Forsyth, A. E.	Agricultural	Bushyhead
Forsyth, Fred	Engineering	Bushyhead
Frieday, Gladys A.	Domestic Science and Art	Stillwater
French, Laura	Domestic Science and Art	Kiowa, Kansas
French, Mattie	Teachers' Normal	Stillwater
Gay, Thurman	Engineering	Pawhuska
Gilpin, Willie M.	Domestic Science and Art	Frederick
Gloeckner, Gus Louis	Engineering	Fayetteville, Texas
Greene, Rollin	Engineering	Thomas
Hamilton, Murphy	Agricultural	Stillwater
Hanna, H. H.	Agricultural	Ochiltree, Texas
Hardy, Abby	Engineering	Ardmore
Harnden, Millard	Agricultural	Stillwater

Harris, J. T.	Engineering	Kiowa
Hasten, Clyde	Agricultural	Stillwater
Hays, Omer	Agricultural	Amity, Arkansas
Helmer, Richard	Engineering	Helena
Henderson, Ida May	Domestic Science and Art	Tribbey
Hewett, B. H.	Science and Literature	Tyrone
Hildebrand, Harry B.	Engineering	Stillwater
Hill, R. R.	Agricultural	Bliss
Hirschi, Fred	Engineering	Iowa Park, Texas
Hoefer, Cecil	Domestic Science and Art	Stillwater
Hoefer, Forrest	Engineering	Stillwater
Hoke, T. Roy	Agricultural	Quay
House, Russell F.	Engineering	Bristow
Hull, Ray	Agricultural	Stillwater
Hurst, Raymond	Engineering	Fort Cobb
Irwin, R. A.	Engineering	Sallisaw
Jack, Rex	Science and Literature	Stillwater
Johnson, H. J.	Engineering	Helena
Jones, Curran	Engineering	Stillwater
Jones, Fred L.	Science and Literature	Stillwater
Jones, Johnnie	Domestic Science and Art	Reed
Jones, Kate H.	Teachers' Normal	Reed
Kaboth, Rex	Science and Literature	Henryetta
Kammerdiener, C. E.	Engineering	Oklahoma City
Kelly, Carson	Science and Literature	Stillwater
Kilpatrick, Chas.	Agricultural	Hunter
Kilpatrick, Roy	Agricultural	Hunter
Kimbell, J. Albert	Engineering	Altus
Kirby, Arlie	Domestic Science and Art	Stillwater
Kissick, E. A.	Agricultural	Yukon
Knipe, Harriet E.	Domestic Science and Art	Perkins
Knowles, Lola	Domestic Science and Art	Stillwater
Krafft, Wm. August	Engineering	Oklahoma City
Kramp, Ed	Engineering	Okeene
Lambert, N. Archie	Science and Literature	Red Oak
Lonnom, Harrell	Engineering	Shawnee
Long, Florine	Domestic Science and Art	Duncan
Lowry, Keith	Engineering	Stillwater
Mahaffey, Max M.	Engineering	Stillwater
Malernee, Alpha	Domestic Science and Art	Stillwater
Maroney, Hugh W.	Science and Literature	Stillwater
Martin, Elmer	Science and Literature	Mounds
Martin, Ewing	Teachers' Normal	Hickory
Marx, Myron	Engineering	Pawnee
Mathews, Richard	Science and Literature	Stillwater
McDonald, H. B.	Agricultural	Grove
McElroy, C. E.	Engineering	Pineland, Texas
McKee, Calvin	Engineering	Cooperton
Milam, Joe H.	Engineering	Stillwater
Miller, Fern	Domestic Science and Art	Yale
Millikan, Chas. V.	Engineering	Stillwater
Mittendorf, T. H.	Agricultural	Calumet
Moessner, Wallace E.	Engineering	Pocasset
Morrow, Edw. D.	Science and Literature	Stillwater
Moyer, Otto J.	Agricultural	Deer Creek
Mullin, Mildred	Teachers' Normal	Lawton
Muncie, Blanche	Domestic Science and Art	Byron
Murphy, Henry	Agricultural	Glencoe
Nash, Byron M.	Engineering	Paden
Nelson, Ivo	Engineering	Stillwater
Nelson, Joe	Engineering	Carnegie
*Netherton, Beatrice	Domestic Science and Art	Gravette, Arkansas
Netherton, Thos. Cecil	Science and Literature	Bernice
Netick, Joseph	Engineering	Payson
Newton, Roy	Agricultural	Stillwater
Newton, Webb S.	Agricultural	Stillwater
Nichols, Chas. L.	Engineering	Wetumka
Nims, Harry L.	Engineering	Cushing
Oschman, Goldie	Teachers' Normal	Stillwater
Outhier, Virgil	Domestic Science and Art	Homestead
Overstreet, Russell	Agricultural	Cowlington

*Deceased.

Parsons, A. W.	Engineering	Renfrow
Patterson, Edna	Domestic Science and Art	Okemah
Pepperkorn, R. A.	Agricultural	Haskell
Percy, E. F.	Agricultural	Thomas
Pettyjohn, Otho	Engineering	Woodward
Phillips, John B.	Engineering	Ardmore
Pickard, Jesse	Science and Literature	Reed
Pilkenton, E. J.	Engineering	Apache
Plank, Bertha	Domestic Science and Art	Bartlesville
Ploof, Fred	Engineering	Enid
Poole, C. M.	Agricultural	Stillwater
Poole, Grace G.	Teachers' Normal	Stillwater
Porter, Roy T.	Agricultural	Perkins
Putman, O. L.	Agricultural	Woodford
Rabon, Floyd	Agricultural	Madill
Ralston, Marie	Domestic Science and Art	Glencoe
Rapp, Irma	Domestic Science and Art	Stillwater
Ray, Francis	Engineering	Stillwater
Reeves, Archie R.	Science and Literature	Gould
Reichman, Ida V.	Science and Literature	Stillwater
Ringer, A. A.	Agricultural	Ardmore
Robbins, Oscar L.	Science and Literature	Minco
Robertson, Reuben	Agricultural	Stillwater
Rogers, Edith	Domestic Science and Art	Gravette, Arkansas
Rose, Mayme	Domestic Science and Art	Glencoe
Roy, Jessie G.	Domestic Science and Art	Hillsdale
Schofield, Clyde	Engineering	Norwood, Missouri
Scrivener, Jas.	Engineering	Maysville
Shore, Victor W.	Engineering	Crescent
Sicherman, Sam'l	Science and Literature	Glencoe
Smith, Chas. Harold	Engineering	Spiro
Smith, Grover C.	Engineering	Prague
Spain, Bryan	Agricultural	Sentinel
Spain, Ernest	Agricultural	Sentinel
Spear, Catherine	Domestic Science and Art	Winnebago, Nebraska
Squire, Lelah P.	Science and Literature	Arnett
Stanton, C. E.	Agricultural	Marlow
Steedman, Aubrey E.	Engineering	Hobart
Stover, Dora	Domestic Science and Art	Stillwater
Surtees, L. Vincent	Agricultural	Camden, New Jersey
Tarver, L. L.	Engineering	Ardmore
Thompson, Ferral	Domestic Science and Art	Stillwater
Thompson, Josephine	Domestic Science and Art	Mulhall
Thompson, Seth	Agricultural	Mulhall
Tillinghast, Harold	Engineering	Niles
Tucker, Edyth H.	Domestic Science and Art	Cameron
Upton, John Fred	Engineering	Mounds
Vaughan, Frank	Agricultural	Supply
Wallace, Gerald H.	Agricultural	Stillwater
Waller, Lester Leon	Engineering	Fate, Texas
Walmsley, Theresa	Domestic Science and Art	Pocasset
Ware, Virgie	Domestic Science and Art	Stillwater
Watson, Bernal A.	Engineering	Oklahoma City
Webster, Donald W.	Science and Literature	Oklahoma City
Whitaker, Maud	Teachers' Normal	Glencoe
Whittenberg, Geo.	Engineering	Stillwater
Wiggs, Harry	Engineering	Mannford
Wilkerson, Willie M.	Engineering	Davis
Williams, Wm. Russell	Engineering	Hartshorne
Wilmoth, Floyd	Engineering	Enid
Wilson, J. M.	Engineering	Homestead
Wilson, Vergil	Science and Literature	Cherokee
Winn, Annalyza	Domestic Science and Art	Sophia
Withers, Ida	Domestic Science and Art	Glencoe
Woodson, Mortimer	Agricultural	Walters
Woodworth, Ernest F.	Engineering	Minco
Wortman, Raymond B.	Engineering	Stillwater
Wright, Noah F.	Agricultural	Cashion
Wyant, Lyton	Engineering	Fairview

Sub-Freshmen

Abbott, Glenn W., Niles
Abernathy, Zula M., Stillwater
Adams, Roby H., Coalgate
Autry, Chas., Stillwater

Bandelier, Geo. E., Stillwater
Barnes, Thos., Lipscomb, Texas
Barr, Robt. P., Stillwater
Barry, Dewey C., Boswell
Bass, J. F., Elk City
Baumann, August, Bessie
Beatty, Homer G., Stillwater
Beck, Will, Hunter
Bellamy, Constance, Stillwater
Bever, Frederick L., Skedee
Bilyeu, Floyd, Stillwater
Blazier, Warren E., Lawton
Bonar, Fred, Lovell
Bradbury, Florence, Enid
Bray, Thos., Duncan
Breidenthal, Leslie T., Stillwater
Brixey, Lloyd, Stillwater
Bruce, Earl, Collinsville, Texas
Bruton, Bennie, Haworth
Bundy, Clifford, Hayward
Bunney, Bessie, Stillwater
Byrd, Lincoln M., Glenoak

Callaway, S. C., Duncan
Cawood, Ernest R., Stillwater
Chewning, Quacie, Stillwater
Clausen, C. A., Stillwater
Clausen, Ethel, Stillwater
Clay, Henry, Ninnekah
Cloughly, Harmon, Cornish
Coffman, John B., Fort Towson
Compton, Harry, Terlton
Conner, Harry E., Harrah
Cooley, D. F., Bridgeport
Cooley, W. A., Bridgeport
Costello, C. L., Lindsay
Curd, Walter, Tulsa

Dailey, Edna, Stillwater
DeBord, Florence, Stillwater
DeBord, Grace E., Stillwater
Dennison, Myrtus, Stillwater
Dial, Lee, Reed
Dickey, Albert D., Omega
Diskcon, Cecil B., Hugo
Dill, Glenn E., Okemah
Donehoo, Grace A., Mangum
Dorchester, Sam G., Pauls Valley
Dose, Herman Wm., Mounds
Dunagan, Geo. H., Beggs
Duncan, Geo., Chickasha
Dunlavy, Henry E., Stillwater
Durham, Maye, Stillwater

Eastwood, Carr L., Boswell
Eikenbary, G. C., Jennings
Elwell, Rex, Stillwater
Emmons, Clarence D., Stillwater

Fisher, Scott, Avery
Floyd, Robt. Evan, Hastings
Forrester, H. E., Stratford
Franklin, Chester, Dempsey
Franklin, Leona, Dempsey
French, Earl R., Stillwater
Frieden, Wm., Kiowa
Fullerton, Paul F., Bridgeport
Furry, Loy, Pawnee

Garlock, Harry, Cestos
Gordon, Isla, Perkins
Gray, Julia, May
Green, E. B., Cestos

Hagar, Byron M., Elk City
Hamilton, P. T., Geronimo
Harp, Juna Marie, Stillwater
Harp, Norris, Stillwater
Hatch, Mrs. Ivy, Glencoe
Hays, R. B., Glencoe
Henderson, Davis D., Tribbey
Henderson, Inez, Hanna
Henderson, Ora, Tribbey
Hendrix, Paul, Sayre
Hentz, Jean Valjean, Oklahoma City
Hildebrand, Eric B., Stillwater
Hinton, Troy, Marlow
Haggard, Paul C., Hickory
Holler, Roy, Davidson, North Carolina
Hopkins, Blanche, Stillwater
Hopkins, Maud, Stillwater
Hoskinson, Helen, Stillwater
Howe, Robt. Scott, Hugo
Huff, Robert, Stillwater
Huguley, Alfred, Balko
Humphrey, Buell H., Owasso
Huskey, Willie, Fort Towson

Ives, Nellie, Avery
Ivy, Earl, Oklahoma City

Jacobs, Clare, Stillwater
Janeway, Harold, Stillwater
Johnson, Ezma, Kendrick
Johnson, Pearl F., Orlando
Johnston, Mrs. Clive, Morrison
Jones, Katie M., Stillwater
Jones, Rodman McCliney, Stillwater
Joseph, Othal K., Doxey

Kayser, Wm., Spiro
Keirsey, Lee Denton, Ada
Kiersey, N. S., Ada
Krone, Jessie Marie, Sparks
Kutis, Frank M., Edmond

LaBohm, Henry, Oklahoma City
Lacour, Ray Herbert, Supply
Lambert, Letha, Perkins
Lehne, Chas., Elk City
Leslie, Lewis F., Cestos
Lewis, Willie A., Wynnewood
Lillard, Wm., Pawhuska
Lingenfelder, Emma, Stillwater
Long, C. May., Cushing
Lovell, Lillian, Lovell
Lusk, Monnie, Stillwater
Luster, Billie, Washington
Lynch, Andrew G., Hennessey
Lytton, Alyan, Stillwater

Mahaffey, Konrad W., Stillwater
Mahaffey, Nellie B., Stillwater
Markwell, Ethel, Oklahoma City
Markwell, Nettie, Oklahoma City
Martin, Archie O., Watonga
McKinley, Wm., Bartlesville
McQuellin, Grank G., Oklahoma City
Meek, Roy, Thorp Springs, Texas
Meigs, Chas. Ross, Hulbert
Merchant, Vivian, Stillwater

Neighbors, Ed R., Marvin
Nelson, Billy Bell, Stillwater

Odorman, J. J., Oklahoma City
O'Keefe, Margie, Yale
Orr, Don M., Earlsboro

Parker, Jennie L., Stillwater
Patton, Pearl, Stillwater
Pearce, Carl J., Agra
Percival, Chas. A., Bay City, Texas
Postelle, Guy R., Oklahoma City

Ray, Tom, Wellston
Reed, Otis C., Washington
Rennie, M. Alfred, Pauls Valley
Rocket, Louis H., Woodford

Scales, Joseph A., Webbers Falls
Schippert, Vina M., Perkins
Schnurr, Angie, Orlando
Scivally, Bernice, Springer
Scott, Frances, Stillwater
Shields, Wm., Calumet
Shirley, Emory, Gage
Shortridge, Dudley A., Temple
Smith, Albert J., Bryant
Smith, Carl, Stillwater
Smith, Chas. D., Coalgate

Thomas, Martha, Stillwater
Thompson, Verda Belle, Stillwater
Tolleson, John Wm., Paoli
Tomlin, Haysel, Balko
Trekell, Edna S., Stillwater

Wallace, Mary, Stillwater
Wallace, Tate, Dustin
Watkins, Drew, Canute
Watkins, Wesley, Kinta
Watson, Glenn, Stillwater
Watson, Warren, Oklahoma City
Westfall, Marion D., Oklahoma City
Wheeler, Pearl, Stillwater
Whipple, John W., Stillwater

Yentz, Kathrin, Edmond

Miller, Henry J., Enid
Miller, Josephine, Yale
Mitchell, Gail V., Stillwater
Money, Earl, Bartlesville
Morgan, Mary, Glencoe
Morrison, Willis, Cushing
Morrow, J. R., Stillwater
Murphy, Harry, Hinton
Myatt, Wm., Yale

Noble, Geo. B., Poteau
Nystrom, Chas. G., Chicago, Illinois

Owsley, Lindsay, Stillwater
Owsley, Wm. Albert, Stillwater

Powell, Franklin W., Stillwater
Powell, Willard, Stillwater
Price, Nellie, Hobart
Pringie, Marguerite, Kendrick

Rogers, Bessie, Stillwater
Rogers, Geo. W., Enid
Rose, Anna, Glencoe
Roy, Percy F., Hillsdale

Smith, Gilbert G., Red Boiling Springs, Texas
Stallings, Eliza, Morrillton, Arkansas
Stansbury, Floy, Stillwater
Stinson, Clarence E., Comanche
Stockton, Forest D., Perkins
Stockton, Julia P., Perkins
Stringer, Grady S., Ochelata
Swim, Leslie, Stillwater
Swim, Paul M., Stillwater

Turner, Irene, Quinton
Turner, Obia C., Burneyville
Turner, Preston, Parkman
Tuttle, Jas. Bond, Tuttle

Whistler, Jessie, Boynton
Whitford, Thos. N., Jones
Williams, Georgia A., Stillwater
Williams, J. L., Stillwater
Wilson, Eva, Cushing
Winkleman, Mary M., Sparks
Womble, Murray R., Tulsa
Woodring, Anna, Glencoe
Wortman, W. Frank, Stillwater

Specials

Allen, Floyd, Stillwater

Barlow, Ralph, Beverly, West Virginia
Barrett, Mrs. E. R., Stillwater

Bonnette, Alpha, Ponca City

Clark, Chas. L., Stillwater

Cochran, Oakley M., Ralston

Dawson, Mamie, Scipio

Dauthitt, Cecil, Sulphur

Emmons, Mrs. Clara M., Stillwater

Gilpin, Gladys, Frederick

Hamm, Ruby Ruth, Enid
Harnden, E. E., Stillwater
Harris, Mrs. E. H., Stillwater
Hastings, Alice, Stillwater

Herron, Leonard G., Stillwater
Hewitt, Paul M., Stillwater
Hildebrand, Clara B., Stillwater
Hilgenberg, R. C., Elk City

Jablow, Mrs. Chas., Stillwater
Jackson, V. T., Stillwater
James, Josephine, Burden, Kansas

Lewis, Velma, Stillwater

McBride, Margaret, Geary
McPheeters, Martha, Stillwater
Merry, Geo., Stillwater

Nye, Florine, Stillwater

Painter, H. R., Stillwater

Reichman, Elizabeth M., Stillwater
Rickard, C. H., Stillwater

Sanborn, Mrs. C. E., Stillwater
Skillman, J. C., Tulsa

Walker, Faye B., Stillwater
Weaver, G. E., Stillwater

James, Alice, Stillwater
Janeway, Helen, Stillwater
Johnson, Norma, Stillwater

Lowry, Ethel, Stillwater

Moeller, Wilhelm, Stadthagen, Germany
North, Esther A., Geary

Pitzer, Nellie, Stillwater

Robertson, Lola, Stillwater

Studebaker, Rosa, Stillwater

Whittenton, Mrs. R. O., Stillwater
Wortman, Theresa, Stillwater

Business

Anderson, Dunn H., Uvalde, Texas
Andrew, Eunice, Stillwater
Andrews, H. A., Stillwater

Bingham, H. B., Minco
Blasingame, Helen, Pawhuska
Borah, Carl M., Fairfield, Illinois
Bryan, Corrine E., Stillwater
Bryant, Everett E., Maysville
Bryant, Lester, Maysville

Carson, Phillip, Hominy
Carter, J. Lee, Madill
Chilcote, Maude, Stillwater
Chivington, Fred I., Stillwater
Christopher, Donald R., Oklahoma City
Clingenpeel, S. J., Stillwater
Cochran, Ada, Stillwater

Dodson, Vern, Ochiltree, Texas
Donart, Ruth, Stillwater
Donnelly, G. A., Sedan, Kansas
Downing, Ruby, Stillwater
Duncan, Donald Lee, Dallas, Texas

*Farr, John Gist, Jr., Antlers
Faught, Cleveland, Fort Towson

Gillum, Lloyd, Minco
Gionta, N. C., Krebs
Goode, Carl, Sulphur

Hale, Edna, Stillwater
Hall, Mrs. Beulah, Stillwater
Hall, C. L., Ardmore
Hall, Howren, Stillwater
Harrell, S. G., Ardmore
Harris, B. C., Ardmore

Irwin, Luke, Soper

Johnson, Cedric, Lawton

Kelly, Shannon, Stillwater
Kirchner, R. R., Perry

Lewis, E. O., Stillwater
Looman, Roscoe O., Hobart

Andrews, Leonard, Stillwater
Arbuckle, Fulsom, Madill

Bumpas, Frank, Madill
Burke, Elizabeth, Stillwater
Burnham, Ruth E., Stillwater
Burnham, Sam'l J., Stillwater
Butt, Edw., Oklahoma City
Byrd, Laura, Glenoak

Cosner, Brent, Hobart
Cossey, C. C., Prague
Cresser, C. S., Stillwater
Crosby, Harold E., Chelsea
Crow, Rosa Cornish
Currie, Gladys, Stillwater

Durham, G. C., Stillwater
Durham, Hubert, Stillwater
Dutcher, Carrie, Stillwater
Dutcher, Mary F., Stillwater

Fessler, Harry B., Cleveland
Francis, Anna, Fort Cobb

Gover, Ben, Pawnee
Gray, Gladys, Okeham
Groom, Guy, Miami

Hayes, Margaret, Stillwater
Higgins, Artis W., Stillwater
Huff, Elmer L., Geary
Huff, Ina, Ponca City
Hunt, Ruth A., Stillwater

Kirkpatrick, Nevins, Antlers
Knowles, Leah M., Stillwater

Lucas, Jas., Stillwater

*Deceased

Martin, Louise, Stillwater
Mathies, J. Paul, Wister
McCoy, Minnie, Stillwater
McKee, Claud, Cooperton
Miller, Eva, Stillwater
Miller, Harold C., Shattuck
Million, Burrel, Supply

Newton, Edna, Stillwater
Newton, Laura, Cameron, Texas

Pantler, Joe Paul, Bixby
Parkhurst, Lorenzo, Bristow
Patterson, Clay, McCurtain
Patton, Mary, Stillwater
Perdue, E. R., Stillwater
Phenis, Mrs. Elma, Stillwater

Rawls, Sterling, Davis
Ray, Elsie, Stillwater
Ray, Florence, Stillwater
Ray, Margaret, Stillwater
Redwine, Jas. B., Stillwater
Reeves, Ruby, Tulsa
Reichmann, Clive, Stillwater
Reichmann, Carl R., Stillwater

Sanders, Prentice, Wheeler, Texas
Sayre, Evert, Morrison
Schneberger, N., Apache
Schubel, Leta, Stroud
Sewell, Roy, Miami, Texas
Sharp, Ruth, Stillwater
Shelby, Jesse O., Geary
Sherman, I. B., Garber

Taylor, Emmett R., Bristow
Taylor, Myrtle, Stillwater
Taylor, Oscar, Stillwater

Utter, O. E., Cherryvale, Kansas

Vermillion, Eugene, Stillwater

Waggoner, Addie, Marshall
Waller, Neva, Frederick
Walton, Roy, Leedey
Waters, John P., Pawnee
Weir, M. Blanche, Stillwater
Weilman, Lola, Stillwater

Mittendorf, Monetta, Weleetka
Mondy, Chas. H., Stillwater
Moore, Mrs. Fannie E., Stillwater
Moore, Helen G., Stillwater
Morgan, Bernice, Stillwater
Moss, Eugene, Kingfisher
Myers, Geo. T., Thomas

Newton, Maud, Stillwater
Norman, Victor, Stillwater

Pickering, Ernest, Cherryvale, Kansas
Plank, Norris, Bartlesville
Price, Glen C., Stillwater
Pullman, Grace, Stillwater
Pullman, Margaret L., Stillwater

Reid, John Roy, Stillwater
Richards, Carl, Corsicana, Texas
Robertson, Okla Payne, Stillwater
Robinson, Earl, Minco
Robinson, Ray, St llwater
Rock, F. H., Pawnee
Rock, Lois V., Pawnee

Shurley, O. D., Rock Springs, Texas
Slaughter, Lucy D., Stillwater
Smith, Frank, Chelsea
Spurrier, A. Kara, Stillwater
Steen, Lucile, Stillwater
Stewart, Byron, Tecumseh
Stratton, Henry, Blum, Texas
Sullivan, Maud, Stillwater

Tesh, John Franklin, Howard, Kansas
Thomas, Battle, Caney
Trekell, Wm. A., Stillwater

Wilson, Golden, Walter
Wilson, Willie, Tecumseh
Windolph, Pauline, Vici
Wittich, V. R., Stillwater
Woolard, Alonzo, Stillwater

School of Agriculture and Domestic Economy

Aldridge, Tom, Quinton
Allen, E. M., Quinton

Baggett, P. J., Memphis, New York
Baumann, Willie, Bessie
Bergstrasser, Frieda, Stillwater
Bohlen, F. R., Cordell
Borchers, Wm., Bessie

Carvey, J. Louis, Broken Arrow
Cash, M. A., Temple
Cavett, John, Dover

Dunkin, Francis W., Guthrie

Ennen, Alex, Greenfield

Fisher, Chester J., Crowson
Fitzwater, Clarence, Watonga

Gallegly, John H., Erick
Gillespie, F. G., Ripley
Gillespie, H. K., Ripley

Anderson, Geo., Shawnee

Bowers, J. B., Bainbridge, Ohio
Bradley, Joe, Hartshorne
Brewer, J. C., Grimes
Burger, R. A., Stillwater
Burger, Mrs. R. A., Stillwater

Coleman, Coy, Durwood
Colwell, Forest, Tribbey

Dunn, W. A., Wapanucka

Frazee, Guy C., Lenora
Fulton, Joseph H., Atoka

Graham, Cecil W., Verden
Graham, Frank, Verden
Groeneman, Clarence, Miami

Hall, Lester F., Issabella
Hawkins, Delphia, Jefferson
Holmes, John W., Lexington

Johnson, Russell, McComb

Koch, Henry, Bessie

Lovell, L. L., Waukomis

Marriott, Florence E., Rockville, Missouri
Mathers, Roy, Mobeetie, Texas
McKeand, Agnes, Dallas, Texas
McLean, Luther, Wewoka
McReynolds, L., Elk City
McReynolds, T. D., Elk City

Norris, Morgan, Cashion

Patkoski, Benj. M., Homestead

Riffe, H. G., Tyrone

Sanders, Lewis, Greenfield
Schmidt, Lillian, Okeene
Schwarz, Louis Simon, Manchester

Talla, Ernest, Clarksville, Texas
Tatum, Harry, Cushing
Taylor, Lisle, Chandler
Tompkins, Cavette E., Braman

Waggoner, B. H., Marshall
Wallis, Bertha, Claremore
Wallis, Clarence, Claremore
Walter, Roy D., Elk City
Wells, Harry, Stillwater

Young, W. B., Morrison

House, Horace, Altus
Howard, R. M., Louis
Hurd, Paul R., Broken Arrow

Kordenot, Paul, Anadarko

Meigs, Carrie M., Hulbert
Meredith, Ruble, Cushing
Messenger, H. A., Hillsdale
Moore, Francis, Morrison
Mowbray, Opal D., Jefferson
Myers, Anna M., Thomas

Pearson, Lewis I., Newburgh, Indiana

Rodke, David L., Paoli

Slaughter, Chester H., Stillwater
Stimson, Nathaniel M., Holly, Colorado
Swengel, Stanley, Wetumka

Thompson, R. E., Stillwater
Trees, Paul R., Tulsa
Turnbeaugh, Tyler, Hartshorne

Wilson, Chas. S., Seminole
Wilson, Warner, Osage
Woodring, Carl W., Pawhuska
Woodring, Leo, Pawhuska
Wrigley, H. J., Vian

Summer Normal

Albert, Blanche, Stillwater
Albright, Gae, Perkins
Alles, Elvira, Cushing
Amey, Julia, Ripley
Anderson, Eula, Shawnee

Balfour, Bessie, Stillwater
Balfour, Ruth, Stillwater
Barnes, Thos., Lipscomb, Texas
Barron, Merle Wm., Stillwater
Bassler, Emma, Stillwater
Bates, Corinne, Anadarko
Bell, Mrs Ellen J., Stillwater
Berryhill, Roby, Stillwater
Bieberdorf, Lydia, Orlando
Biggin, Dorothea C., Stillwater
Bilyeu, Floyd, Stillwater
Bishop, Corinne, Stillwater
Bishop, Deane, Stillwater
Bishop, Minnie E., Texhoma
Bishop, Willie Jaye, Stillwater
Biswell, Cora, Ripley
Biswell, Mary E., Ripley
Blackwell, Carl P., Floydada, Texas
Bonar, M. H., Stillwater
Bonar, Mollie, Stillwater

Caldwell, Mable, Stillwater
Campbell, Anna, Morrison
Carney, Zora, Stillwater
Chilcote, Pearl, Stillwater
Church, Myrtle B., Perkins
Clark, Chas. L., Stillwater
Clark, Josephine, Stillwater

Anderson, Sula, Shawnee
Andrew, Eunice, Stillwater
Andrews, Maud, Okeene
Andrews, Myron, Okeene
Autry, Raymond, Stillwater

Bradford, Florence, Agra
Brandon, Edna, Stillwater
Breidenthal, Hazel, Stillwater
Briggs, Nellie M., Stillwater
Broemel, Agnes, Stillwater
Broemel, Richard, Stillwater
Broich, Walter F., Big Stone City, South Dakota
Brower, Laura, Stillwater
Brower, Maud, Stillwater
Brown, Houston, Cushing
Brown, Lois, Thomas
Brown, Mary, Agra
Brown, Maurice, Agra
Bryan, Ila C., Stillwater
Buffington, Edith, Stillwater
Bunney, Bessie, Stillwater
Burke, Elizabeth, Stillwater
Burns, Stella, Vinco
Byrd, Laura Jean, Stillwater

Clausen, Ethel, Stillwater
Clausen, Nellie, Stillwater
Cloud, Esther, Meno
Clowers, C. F., Okemah
Cochran, Ada, Stillwater
Compton, Grace, Stillwater
Conner, John Henry, Stillwater

Cooley, D. F., Bridgeport
Copley, Irl R., Hinton
Correll, V. L., Stillwater
Cox, Mary E., Stillwater
Crays, Mrs. Gussie, Morrison

Darlow, Margaret C., Stillwater
DeMoss, Marie, Stillwater
Donart, Gladys, Stillwater
Dolde, Marguerite, Guthrie
Dorman, Ruby, Prairie Grove, Arkansas
Dorsett, Ralph D., Lamont

Edwards, Walter D., Stillwater
Elston, W. B., Shawnee

Fellows, Iris, Stillwater
Fisher, John M., Clinton
Ford, Clara, Perkins
Forrester, Chas., Stratford
Foster, Ethel B., Coyle

Gartman, Harold, Ripley
Gilbert, Neta M., Glencoe
Goss, Bessie, Cushing
Goss, Rubie, Cushing
Gothard, Eunice O., Everton, Missouri

Hagar, W. Edgar, Stillwater
Hainlen, Rose, Marion, Indiana
Hale, Fannie, Stillwater
Hall, Ethel, Lone Wolf
Hall, Gertrude, Stillwater
Hamilton, Fearn, Stillwater
Hamilton, Jennie, Geronimo
Harnden, F. D., Stillwater
Harnden, Millard G., Stillwater
Harris, Elsie, Cushing
Harvey, Ruth A., Stillwater
Hastings, Alice, Stillwater
Haston, Clyde, Stillwater
Hayes, Margaret, Meeker
Hayes, Sadye, Meeker
Henderson, Echo, Yale
Henderson, Maye, Tribbey

Irvin, Gladys, Stillwater

Jablow, Mrs. Frances, Stillwater
Jacob, Celia, Stillwater
Jenkins, Mrs. C. M., Stillwater
Jenkins, Henry, Perkins
Johnson, Ina, Vinita
Jones, Chauncey, Stillwater
Jones, Chester, Wapanucka
Jones, Daisy L., Stillwater

Kelim, Anna, Glencoe
Kelly, Ruth, Stillwater
Kennedy, Mabel, Morrison
Kennon, W. D., Stillwater
Kimball, Bertha, Jennings
Kirby, Arlie, Stillwater

Larmer, Mrs. Etta, Cushing
Lauderdale, Ruby, Stillwater

Mantle, Guy, Adair
Marble, Mable, Yale
Marker, Walter, Orlando
Marsh, Corinne, Stillwater
Marsh, Venus L., Stillwater
McAnally, Ora, Coyle
McBride, Lillian, Stillwater
McBride, Nellie L., Stillwater
McBride, R. V., Stillwater

Cross, Esther, Glencoe
Crow, Ada, Cornish
Crow, R. L., Cornish
Crume, Nency, Stillwater
Cunningham, Anna, Stillwater

Doty, Pauline, Cushing
Durham, Fern J., Stillwater
Durham, Grover C., Stillwater
Durham, Hubert, Stillwater
Durham, Maye, Stillwater

Elswick, Roxie, Caldwell, Kansas
Estes, Van E., Headrick

Foster, Nellie, Stillwater
Frans, Arda, Thomas
Freeman, Hassie, Cordell
French, Laura, Kiowa, Kansas
French, W. O., McLeansboro, Illinois

Gray, Helen, Stillwater
Griffeth, L. A., Stillwater
Gross, Leona, Braman
Gross, Myrtle, Braman

Henderson, Ora, Tribbey
Henderson, Rhetta, Yale
Henson, Claude, Stillwater
Henson, Tracey, Stillwater
Hesser, Edith, Glencoe
Hesser, John, Glencoe
Hewett, Norma, Stillwater
Hiet, Sadie, Stillwater
Hinkle, Georgie M., Stillwater
Hitchcock, Edith, Stillwater
Hockaday, Fannie, Granite
Hoggatt, Nellie, Stillwater
Holden, Teco, Rushville, Indiana
Hornbeck, Ruby E., Glencoe
Hunt, Esther, Stillwater
Hunt, Ruth A., Stillwater

Jones, Donna, Stillwater
Jones, Eva, Stillwater
Jones, Fred L., Stillwater
Jones, Goldie, Stillwater
Jones, Katie, Stillwater
Jones, Otis L., Stillwater
Jones, Rodman M., Stillwater
Jordan, Chas. N., Meridian, Mississippi

Kennon, Mrs. W. D., Stillwater
Kenyon, Hallie, Kaw City
Kenyon, Lucille, Kaw City
Kimball, Amy, Jennings
Knight, Lillian, Stillwater
Knight, Myrtle, Stillwater

Lewis, Carrie E., Orlando
Lingenfelter, Emma, Stillwater

McCarty, Lena, Stillwater
McClain, Nell, Tryon
McClure, Lyman, Stillwater
McConnell, Mary, Mansfield, Arkansas
McCormick, Karl, Yale
McCoy, Gertrude, Yale
McIntyre, Alma, Dover
McKill, Alice, Ralston
McKill, Zollie, Ralston

McLaury, Floyd B., Cushing
McLelland, Mathilde, Stillwater
McPheeters, Elinor, Stillwater
McWhorter, Ruth, Orlando
McTaggart, Ernest, Stillwater
Michefelder, Mrs. Rose, Ripley
Michefelder, Ruth, Ripley
Miller, Ella N., Stillwater
Miller, Esther, Stillwater
Miller, Hilma, Stillwater
Miller, Ruth E., Helena

Nelson, Ivo A., Stillwater
Neumann, Eleanor, Stillwater
Newland, Nora, Glencoe

Owsley, Byrla, Stillwater

Painter, Dorothy, Stillwater
Patterson, Edna, Stillwater
Patton, Laura, Stillwater
Patton, Mary, Stillwater
Pearson, Oscar E., Yale
Peck, Harold L., Stillwater
Perswell, Paris, Sparks
Perswell, Mrs. Paris, Sparks
Phenis, Mrs. Elma, Stillwater

Rader, Frank, Glencoe
Rader, Sarah, Glencoe
Radnich, Helen, Stillwater
Raibourn, Bessie, Crocker, Missouri
Ralston, Marie, Glencoe
Ratcliff, Florence, Shawnee
Ray, Elsie, Stillwater
Ray, Margaret, Stillwater
Ray, Marion, Stillwater
Ready, Bessie, Sentinel
Redwine, J. B., Stillwater
Reed, Agnes, Stillwater
Ringwald, Grover A., Perkins

Schiefelbush, T. L., Yale
Scott, E. H., Stillwater
Scott, Izora, Roll
Seetin, Nellie, Meeker
Selph, Nina, Stillwater
Sharp, Ruth, Stillwater
Shaw, Ava, Stillwater
Shellhammer, Alpha, Coyle
Shellhammer, Edna, Coyle
Shellhammer, Jacob, Coyle
Shellhammer, Wm., Coyle
Sherrard, Lois, Orlando
Shively, Hazel, Stillwater
Showalter, Esther, Thomas
Shreves, Mable, Ripley
Silverthorn, Bess, Tryon
Simank, Edw. W., Fayetteville, Texas
Simmons, Virgil, Stillwater

Thompson, Ferral, Stillwater

Utter, Mollie, Perkins

Walker, Lewis, E., Fort Worth, Texas
Wallace, Gerald A., Stillwater
Wallace, Mary E., Stillwater
Wantland, Faye, Stillwater
Ware, Virgie, Stillwater
Warren, Margaret A., Stillwater
Warren, Pearl G., Stillwater
Weber, A. G., Calumet
Weir, M. Blanche, Stillwater
Wheeler, Birdie, Stillwater

Young, Trissie, Stillwater

Miller, Ruth, Perkins
Milliken, C. V., Stillwater
Mittendorf, T. H., Calumet
Moore, Gilbert P., Stillwater
Moorman, Helen, Stillwater
Morgan, Edith, Glencoe
Morgan, Vera, Stillwater
Morrison, Virginia, Stillwater
Morrow, Edw., Stillwater
Murphy, Henry, Glencoe

Newton, Maudie, Stillwater
Nix, Mrs. M., Ponca City
North, Esther A., Geary

Owsley, Lindsay, Stillwater

Pitzer, Florence, Stillwater
Pitzer, Nellie, Stillwater
Plank, Bertha, Bartlesville
Poole, Mrs. Emma T., Stillwater
Poole, Grace G., Stillwater
Potter, Anna, Stillwater
Prowant, Ina B., Stillwater
Pullman, Grace, Stillwater
Pullman, Margaret, Stillwater

Ringwald, John W., Perkins
Robertson, Reuben, Stillwater
Rockey, Nellie, Stillwater
Rogers, C. F., Stillwater
Rogers, M. Eulala, Stillwater
Rose, Mayme, Glencoe
Rotroff, Loto, Glencoe
Rule, Orpha, Orlando
Russell, John H., Glencoe
Rust, Iva, Stillwater
Rust, Walter, Glencoe
Ryno, Madeline, Stillwater

Smith, John G., Chickasha
Snyder, Georgia, Lovell
Soldani, F. E., Ponca City
Spear, Catherine, Stillwater
Spear, Mary, Stillwater
Spencer, Nathalie, Yale
Spohn, Callie M., Stillwater
Stansbury, Anna, Lovell
Stansbury, Nora E., Stillwater
Stinson, Chester C., Comanche
Stockton, Julia, Perkins
Stoker, Earl, Quay
Stover, Bessie, Stillwater
Studebaker, Rosa, Stillwater
Sullivan, Maud, Stillwater
Swander, Vala, Cushing
Swim, Leslie L., Stillwater

Thompson, Pauline C., Ralston

Whillock, Beuna, Stillwater
Whipple, Pauline, Stillwater
White, John P., Lott, Texas
Whitten, Ethel, Jennings
Wildman, Ethel, Stillwater
Williams, Russell G., Chicago, Illinois
Wilson, Orville G., Cherokee
Withers, Ida, Glencoe
Wortman, Theresa, Stillwater

Young, Vesta, Ames

Farmers' Cotton Grading Course

Adkins, B. F., Oakland

Barnes, W. A., Pontotoc
Bell, J. C., Tecumseh
Bergman, D. B., Sapulpa

Bowman, J. F., Rocky
Boylan, E. E., Shawnee
Buzzard, Le Roy, Luther

Connell, J. S., Stillwater
Cook, H. P., Guthrie

Craig, J. M., Duncan
Crumley, D. A., Allen

Davis, A. H., Rush Springs
Davis, Sam, Rush Springs

Dunlap, Roy, Perkins
Dunn, Oscar, Lawton

Estes, Van E., Headrick

Evans, A. R., Columbia, Missouri

Fields, E. N., Ravia

Francis, Lee, Wapanucka

Grilley, Joe, Lehigh

Gurley, W. P., Kiersey

Henson, Albert G., McLoud

Howard, T. F.,Erick

Jackson, J. W., Duncan
Jones, E., Wetumka

Jones, R. M., Stillwater

Key, Ray J., Okemah

Lewis, L. T., Fletcher

Low, Ed, Lexington

Markee, I. G., Perkins
Marshall, H. D., Chandler
Martin, J. E., Wanette
Martin, O. C., Wanette
Mayo, E. L., Valliant
McCombs, W. E., Hominy

McKenzie, I. E., Mangum
McLennon, L., Oklahoma City
Miller, W. T., Porum
Mills, W. W., Vian
Minear, S. A., Stillwater
Morgan, K., Ardmore

Oliver, W. A., Glencoe

Pugh, A. B., Ardmore

Randle, G. H., Stillwater
Rawlings, E. F., Wanette
Rawls, Sterling, Davis
Redwine, J. B., Stillwater
Rhoads, A., Coyle

Roads, Jas. W., Oklahoma City
Robertson, J. W., Stillwater
Rowe, Virgil L., Davis
Rumsey, J. J., Stidham
Ryman, W. C., Sulphur

Schofield, H. N., Oklahoma City
Shaffer, W. A., Konawa
Signs, C. M., Coyle
Sims, L. L., Wilburton

Smith, C. C., Marietta
Swarts, W. C., Alden
Swarts, L. L., Manitou
Swingle, H. A., Mazie

Thomas, O., Ahpetone
Thornburgh, L. C., Clinton

Trader, S. T., Mountain Park

Watts, Harry, Shawnee
West, M. L., Calvin
Williams, S. D., Purcell

Wilson, J. A., Stillwater
Winget, A. S., Cushing

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Session 1913-14

Senior class	81
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Sophomore class	183
Freshman class	209
Sub-Freshman class	217
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Total	1,483
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Total	2,376

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